

**Environmental Quality of Private Rooms and Resident's Possessions
in a Japanese Nursing Home
- Toward a New Viewpoint for Environmental Assessment of Nursing Homes**

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ABSTRACT

The aging rate in Japan has now reached 17.9%, and elderly households make up 13.7% of all households. Considering that 49.2% of these elderly households are single person's households who are living alone, we currently understand that enrichment of the environmental conditions at residential facilities for the elderly is an increasingly important problem. Through the research reported here, we consider desirable possessions that contribute to improvement of the quality of life (QOL) of the residents of nursing homes. In this research, we investigated the current possessions of 46 residents of the first example of the nursing homes in Japan that were designed to provide completely private rooms. The possessions were classified as either Action-Objects (things that require manipulation or operation for doing something) or Contemplation-Objects (things that are viewed and appreciated), according to Csikszentmihalyi and Rochberg-Halton (1981). Of the total of 2009 objects that were checked, 74% were Action-Objects. A correlation was seen between the degree of individual activities of daily living (ADL) and the number of Action-Object possessions. The results suggested that the current possessions for the use of daily life is determined by a person's ability to move around, and therefore the possibility of other various daily life activities is tightly limited in advance. We also found that the greater the degree of dementia, the fewer are the possessions, and, therefore again, the types of activities that are possible are extremely limited.

1. Introduction

Population estimates for 2002 indicate that the ratio of senior citizens in Japan has already reached 17.9%. This "aging of the population" is expected to continue in the future, with one in four Japanese citizens expected to be 65 years or older in the year 2015. Based on these projections, and on the additional characteristic of Japanese demographics that the ratio of senior citizens is increasing more

rapidly than in other countries, a wide range of measures has been implemented within Japan over the years to respond to the issue of the “aging society.” Various measures have been implemented in response to the effects on individuals’ living environments generated by negative physical factors, which represent the main effects of aging. These measures include: the enactment and operation of the Long-term Care Insurance System (operation of which began in 2001), the enactment of regulations related to residential facilities and the maintenance of living environments for seniors (e.g., the Law Concerning the Assurance of Safety in Residences for Seniors (enacted in March 2001), and the construction of residential facilities, etc. (e.g., nursing homes)).

In the past, the ratio of seniors living with their children in Japan was high in comparison to western countries, but in recent years there has been a continuing trend toward nuclear families, and the ratio of seniors living with their children is on the decline. (For reference: according to a national census in 2000, 49.1% of all persons aged 65 and over were living with their children; in 1980, this figure was 69%.) Currently, most “senior households,” which account for 13.7% of all households in Japan, consist of persons living alone or husband and wife only (FY2001 survey). Furthermore, given that seniors aged 75 and over—an age at which many people suffer from some form of lifestyle disability—now account for 7.4% of the population, the improvement of environments in residential facilities for seniors is becoming an increasingly critical issue. Systems formulated to respond to this issue, as well as facilities themselves, have adopted as an ideal goal “to improve the lifestyle level of persons using these facilities to a level equivalent to that preceding the onset of difficulties, or to offer the potential for an even richer lifestyle, in order to help the individual overcome difficulties encountered in daily life.” Nevertheless, despite extensive empirical debate regarding the specific minor goals that must be achieved in order to achieve this ideal goal, the fact remains that there has as yet been very little specific debate based on objective evaluations.

2. Research Goals

As Wapner et. al. (1995) has pointed out, moving into a nursing home is one situation that can easily create a critical human-environment transition. Wapner et. al. (1995) stated that when the living location is changed, the “human-environment system”—which includes physical, interpersonal and socio-cultural dimensions of the environment—is thrown into confusion in the context of many aspects of that environment, and the result is that previous modes of interaction cease to apply. Particularly in the case of persons using nursing homes, the individual in question is often faced with other problems such as deterioration in physical strength, and we can assume that in many of these cases, speaking in practical terms, it is difficult for the individual to adapt to an entirely new living environment relying on his or her strength alone when moving into such a facility.

One proposed method of lessening the impact of the critical transition has been to reduce the

changes in the environmental elements. In discussions of the role played by familiar personal belongings during relocation, Ohara (1989) and Toyama (1988) indicated that when relocating to a nursing home, bringing belongings (“objects,” including furniture) that were used at the previous residence assists in adaptation to the new environment. In research regarding the function of “objects,” Csikszentmihalyi & Rochberg-Halton (1981) showed that various objects in a residence can act as a vehicle for memories of important people, events, and places. According to Lang (1992), Becker (1978) has also pointed out that “objects” brought into a new environment by the individual can play a significant role in the personalization of a given location. In other words, we could say that “objects” establish a link between the previous environment and the new environment, and have the potential to become the basis for independent efforts on the part of the individual with regard to these new environments. Sherman et. al. (1974), who discussed the perspective of cherished possessions and “adjustment to old age,” objectively pointed out the phenomenon of “Institutionalization” by seniors living in residential facilities as supported by the presence of “cherished possessions.”

In the event of relocation from a private residence to a nursing home, “objects” inherit meaning as an element of the living environment in the face of drastic changes in the features of the physical environment, and are one method of providing a basis for personalization of the new environment. From this perspective, and as demonstrated in the research discussed earlier, many researchers have asserted that bringing objects from the previous residence to the nursing home is extremely significant in the context of such a move. Past research, however, has merely stated that these objects were present in the previous residence; little discussion has focused on further details with regard to these objects. In the current research, we consider “objects” to be things that support daily activities. The condition of daily activities represents an important perspective on the quality of life. The future goal of this research is to establish an index on daily objects that reflects the status of the environment in nursing home facilities and, farther on, to objectively evaluate the relationship between the Activities of Daily Living (ADL) level and the level of dementia of nursing home residents.

3. Research Methods

3.1 Survey outline

In this research, we conducted an analysis based on a survey concerning objects in the private rooms of residents in a nursing home. The survey reported here was conducted in 1996 at a nursing home in a rural area of Toyama Prefecture. There were 50 residents at the time, 46 of whom are subjects of the analysis. In the survey, photographs were taken on all sides of the room interior, and information regarding the objects in the room (everything in the room with which the resident comes in contact, excluding building elements) was read from those photographs. This method was adopted because given that the residents are seniors, a survey in which all residents were asked to name all of

their personal possessions would have been difficult. To facilitate an analysis of the relationship between personal factors and the details of belongings, information on the ADL evaluation level and the level of dementia for all residents was gathered through an interview survey on the staff of a nursing home.

3.2 Surveyed facilities

In the past, a standard characteristic of nursing homes in Japan was to have more than one resident in a single room. In 1995 and beyond, “private rooms” came to be promoted as a means of lessening the impact of relocation. According to current laws (in 2002), the minimum standard area for rooms in nursing home is 10.65m² per person. The nursing home that is the subject of the current research, which was opened in 1994, is the one of the first such facilities in Japan to be comprised entirely of private rooms. Rooms were equipped with the following furniture provided by the nursing home: a bed, a bedside cabinet, a short chest of drawers, and a stool. Residents are allowed to freely bring furniture or other objects into their own rooms.

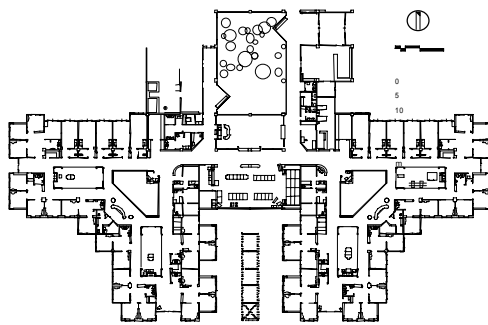


Fig.1. 1st Floor Plan of the Nursing Home

The area of the rooms for 44 of the survey subjects was 12.96m², and for the remaining two subjects was 20.88m².

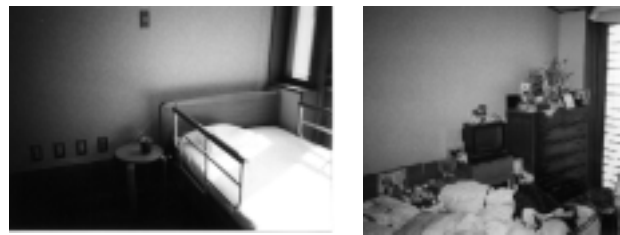


Fig.2. Examples of Private Rooms of the Nursing Home

Resident's profile (LEFT): female, age (81), ADL (E), Dementia (3)

Resident's Profile (RIGHT): female, age (78), ADL (A), Dementia (2)

3.3 Attributes of residents

The subjects of the survey consisted of seven males and 39 females, ranging in age from 63 to 91 years. In terms of ADL levels, 22 of the subjects demonstrated comparatively high levels of independence (A, B, or C on Katz's (1963) index); the remaining 24 subjects demonstrated low levels of independence. With regard to dementia, half of the subjects (23) measured three or more on the Barger scale, defined as a level at which instruction or nursing care is required to carry out daily activities. Residents surveyed had been living in the home for eight to fifteen months.

3.4 Definition of concepts for analysis

“Objects” can be divided into two main categories, depending on the individual's relationship with that object in the context of daily lifestyle situations: those that are “used” in some specific activity, and those that are “seen,” as in the case of ornaments or artworks. Csikszentmihalyi & Rochberg-Halton (1981) also used a similar classification in “The Meaning of Things”—namely, action-objects (whose use involves some physical handling, interaction or movement) and contemplation-objects (whose use is mainly through reflection or contemplation). Csikszentmihalyi

& Rochberg-Halton stated that this classification is a reflection of the concepts of “vita activa” and “vita contemplative,” which were discussed by Arendt (1958), contending that this is an essential, universal classification of objects that exists prior to the attachment of specific meaning on such objects by humans. This paper also supports the viewpoint of Csikszentmihalyi & Rochberg-Halton, utilizing a classification of observed belongings based on the human-object interrelationships of “using” and “seeing.”

Csikszentmihalyi & Rochberg-Halton, however, limited their discussions to “special objects” only, and as a result household objects used in daily activities were not included in that study. Because the current research targets all objects photographed in the room, there are objects that are not taken up in Csikszentmihalyi & Rochberg-Halton’s research. Judgments regarding these objects were made by three judges according to objective characteristics, and based on a consensus of the judges, the objects were classified as either “action-objects” or “contemplation-objects.” We used the Katz scale (Katz, 1963) for ADL evaluations, and the Barger scale (Barger, 1980) for evaluations of level of dementia.

Table 1. Resident’s profile and number of their possessions (Act. Objects = action objects, Cont. objects = contemplation objects)

| Resident's No. | Sex | Age | ADL Scale | ADL Score | Dementia Scale | Act. Objects | Cont. Objects | Resident's No. | Sex | Age | ADL Scale | ADL Score | Dementia Scale | Act. Objects | Cont. Objects | Resident's No. | Sex | Age | ADL Scale | ADL Score | Dementia Scale | Act. Objects | Cont. Objects |
|----------------|-----|-----|-----------|-----------|----------------|--------------|---------------|----------------|-----|-----|-----------|-----------|----------------|--------------|---------------|----------------|-----|-----|-----------|-----------|----------------|--------------|---------------|
| 2 | F | 88 | A | 18 | 1 | 30 | 13 | 20 | F | 87 | A | 18 | 1 | 56 | 14 | 113 | F | 72 | F | 9 | 4 | 15 | 6 |
| 3 | F | 84 | A | 18 | 1 | 47 | 15 | 21 | M | 76 | B | 17 | 1 | 24 | 5 | 114 | F | 70 | B | 16 | 3 | 17 | 3 |
| 4 | F | 81 | E | 10 | 3 | 14 | 9 | 24 | F | 78 | A | 18 | 2 | 70 | 24 | 115 | F | 91 | O | 14 | 3 | 22 | 16 |
| 6 | F | 70 | A | 18 | 1 | 57 | 9 | 25 | F | 79 | A | 18 | 2 | 59 | 20 | 116 | F | 81 | F | 8 | 4 | 17 | 8 |
| 7 | F | 85 | A | 18 | 2 | 45 | 7 | 26 | F | 84 | A | 18 | 1 | 82 | 16 | 117 | M | 75 | F | 8 | 2 | 15 | 6 |
| 8 | F | 79 | C | 15 | 2 | 84 | 55 | 101 | F | 82 | O | 12 | 4 | 38 | 7 | 118 | F | 73 | G | 6 | 4 | 20 | 8 |
| 9 | F | 85 | A | 18 | 1 | 64 | 22 | 102 | F | 85 | G | 7 | 5 | 14 | 7 | 119 | F | 68 | F | 8 | 4 | 15 | 14 |
| 10 | F | 74 | A | 18 | 1 | 53 | 19 | 103 | F | 79 | F | 8 | 4 | 27 | 11 | 120 | F | 93 | F | 9 | 5 | 9 | 10 |
| 12 | M | 70 | C | 16 | 2 | 56 | 16 | 104 | F | 79 | E | 10 | 5 | 18 | 9 | 121 | F | 74 | O | 9 | 5 | 13 | 3 |
| 13 | F | 85 | A | 18 | 2 | 25 | 10 | 105 | F | 83 | G | 6 | 5 | 16 | 8 | 122 | F | 88 | E | 10 | 4 | 31 | 9 |
| 14 | F | 73 | A | 18 | 2 | 45 | 34 | 106 | M | 63 | F | 9 | 6 | 44 | 9 | 123 | M | 80 | E | 12 | 5 | 11 | 5 |
| 15 | F | 65 | A | 18 | 2 | 17 | 6 | 108 | F | 70 | G | 6 | 2 | 19 | 3 | 124 | F | 91 | F | 8 | 5 | 19 | 5 |
| 16 | F | 72 | A | 18 | 2 | 40 | 20 | 109 | M | 72 | F | 10 | 5 | 20 | 5 | 125 | F | 89 | F | 8 | 4 | 28 | 7 |
| 17 | F | 85 | B | 17 | 2 | 34 | 17 | 111 | F | 75 | F | 9 | 3 | 24 | 2 | 127 | F | 86 | F | 8 | 4 | 29 | 10 |
| 18 | F | 83 | A | 18 | 2 | 21 | 5 | 112 | F | 67 | F | 10 | 5 | 11 | 4 | 128 | M | 78 | C | 15 | 2 | 34 | 5 |
| 19 | F | 76 | B | 17 | 2 | 40 | 8 | | | | | | | | | | | | | | | | |

* **The Index of ADL (Katz, 1963):** A: Independent in feeding, continence, transferring, going to toilet, dressing, and bathing. B: Independent in all but one of these functions. C: Independent in all but bathing and one additional function. D: Independent in all but bathing, dressing, and one additional function. E: Independent in all but bathing, dressing, going to toilet, and one additional function. F: Independent in all but bathing, dressing, going to toilet, and one additional function. G: Dependent in all six functions. & other: Dependent on at least two functions, but not classifiable as C, D, E, or F. ***ADL Score:** The total score of Katz’s six functions; Always independent in the function is 3 points, to need some help sometimes is 2 points, and unable to do it by him/herself is 1 point. ***Dementia scale** (Barger, 1980): This classification describes the severity rating of dementia by 6 stages. Class 6 is most severe situation (vegetative), and stage 1’s principle problem is forgetfulness. In this research all residents were classified under these 6 stages.

4. Results and observations

The objects confirmed, as being placed in the residents’ rooms comprised about 258 items, with a total of 2013 specific objects.

4.1 The placement of “objects”

In the category “Things for storage”, there were 44 pieces of furniture and 84 other storage items (containers). In both cases, the correlation between status of ownership and the owner’s ADL level was small ($r=0.316$, $r=0.455$).

There were various types of storage furniture, including the chest of drawers and bedside cabinet provided by the nursing home as well as chests and other items brought in by the residents themselves. At the very least, the furniture provided by the facility was present in all residents’ rooms, but there were many cases in which excess materials that could not fit into this storage space were stored in paper bags, cardboard boxes, and other temporary containers placed in the rooms. There was the correlation

between status of ownership and owner's ADL level on such temporary containers ($r=0.703$).

Table 2. The number of each objects

| 1. Action objects | | | 2. Contemplation objects | | | | | |
|---------------------------------------|------------------|---------------|--|------------------|---------------|-----------------------------|------------------|---------------|
| Categories | Number of owners | Total objects | Categories | Number of owners | Total objects | Categories | number of owners | Total objects |
| <i>Furniture supplied by the N.H.</i> | 46 | 270 | <i>Health equipment & Medicine</i> | 17 | 29 | Visual art | 20 | 33 |
| <i>Chair,cushion</i> | 22 | 35 | <i>Eating utensils & snacks</i> | 32 | 99 | Sculpture | 42 | 134 |
| <i>Table</i> | 7 | 10 | <i>Items of a religious</i> | 2 | 2 | Collection | 0 | 0 |
| <i>Things for storage</i> | 38 | 217 | <i>Bedclothes</i> | 19 | 39 | Books | 11 | 78 |
| <i>Dressing table</i> | 2 | 2 | <i>Sports equipment</i> | 0 | 0 | Photos | 23 | 31 |
| <i>Bed</i> | 46 | 46 | <i>Camera</i> | 0 | 0 | <i>Album</i> | 34 | 36 |
| <i>Musical instrument</i> | 0 | 0 | <i>Toys, games</i> | 4 | 4 | Plates | 0 | 0 |
| <i>Television</i> | 20 | 21 | <i>Stuffed animals</i> | 12 | 21 | Silverware | 0 | 0 |
| <i>Stereo,tape players</i> | 1 | 1 | <i>Clothing</i> | 37 | 120 | Glass | 0 | 0 |
| <i>Radio</i> | 7 | 7 | <i>Fireplace</i> | 0 | 0 | <i>Clock</i> | 39 | 47 |
| <i>Plants</i> | 11 | 18 | <i>Bathroom</i> | 0 | 0 | <i>Certificate of merit</i> | 11 | 19 |
| <i>Pets</i> | 0 | 0 | <i>Others</i> | 14 | 17 | Quilts, textiles | 9 | 14 |
| <i>Aquariums</i> | 1 | 1 | <i>Vehicles</i> | 0 | 0 | Candleholders | 0 | 0 |
| <i>Appliances</i> | 6 | 6 | <i>Telephones, etc.</i> | 0 | 0 | <i>Flowers</i> | 34 | 62 |
| <i>Refrigerator</i> | 10 | 10 | | | | <i>Calendere</i> | 34 | 46 |
| <i>Articles for daily use</i> | 45 | 372 | | | | <i>Religious things</i> | 7 | 17 |
| <i>Daily consumer items</i> | 42 | 142 | | | | <i>Letters</i> | 2 | 3 |
| | | | | | | <i>Others</i> | 2 | 4 |

*1 *Italic* words are new categories added in this research.

*2 "Tool" in the Csikszentmihalyi et al. 's category is concluded in "Articles for daily use" in this research.

Table 3. Relationships between extracted categories of possessions and ADL score of their owners

| | Furniture | Containers | Temporary Containers | Total of Storage items | Articles for daily use | Daily consumable items | Eating utensils & snacks |
|----------------------------|-----------|------------|----------------------|------------------------|------------------------|------------------------|--------------------------|
| | N=43 | N=83 | N=91 | N=217 | N=346 | N=140 | N=98 |
| correlation with ADL score | r=0.316 | r=0.455 | r=0.703 | r=0.653 | r=0.672 | r=0.360 | r=0.442 |

4.2 Status of ownership of action-objects

Action-objects accounted for 1,489 of the 2013 objects examined, or in other words, about 74% of the total. The number of action-objects owned by each individual ranged from 10 to 84, with an average of 32 items. Individuals with a low level of independence (D or higher on the Katz ADL index) owned an average of 20.4 action-objects, which was even lower than the average.

Objects with a high rate of ownership other than the furniture provided by the nursing home were as follows: Articles for everyday use (45/46 residents); Daily consumable items (42/46); Storage items (38/46); Clothing (37/46); Eating utensils and snacks (32/46). In the case of other objects, both ownership rates and quantities were low. Notably, the number of residents with Stereo & tape players, Aquariums, Plants, Dressing tables, and Items of a religious nature was extremely small.

There was a strong correlation between the total number of action-objects owned and the owner's ADL level ($r=0.655$); it was demonstrated that persons with a high level of independence in daily activities have a large number of objects that are related to the actions of daily activities. In terms of correlations between individual object categories and ADL scores, correlations were seen between ADL scores and the numbers of items and owners in two categories: "Articles for everyday use" (45 owners, total of 372 items) and "Things for storage" (38 owners, total of 218 items). These two categories accounted for about 20.5% of the total for all action-objects. There was an extremely strong trend

toward ownership of these objects by residents, and it was clear that these correlations were consistent with the overall trends for action-objects. “Eating utensils and snacks” showed the next strongest ownership trend (32 owners, total of 88 items). Given the low correlation between these numbers and the owners’ ADL levels ($r=0.442$), we can assume that activities related to eating are carried out with comparative ease, and furthermore can be carried out easily regardless of the individual’s ADL level.

4.3 Status of ownership of contemplation-objects and related trends

The average number of contemplation-objects owned by each individual was 11, or about one third of the average for action-objects. There was some variation in the number of contemplation-objects owned by a single individual, with the lowest number being two and the highest 55. In addition to clocks and calendars, many of these objects consisted of hand-made ornaments and other decorations received as presents from visitors to the nursing home, including elementary school children from schools near the facility. Photographs could be seen in 23 of the residents’ rooms, the subjects of which included children and grandchildren, as well as deceased family members and relatives. In the case of many residents with large numbers of contemplation-objects, many objects could also be seen as reflecting personal interests; for example, books, artworks by the individual, and other objects related to the individual’s hobbies.

The correlation coefficient for contemplation-objects is lower than that for action-objects ($r=0.509$). Speaking purely within the limits of our observations, objects that appear to have been brought from home, and which express the person’s individuality or some connection with the previous residence—for example, decorations—are not as closely related to ADL levels as “articles for everyday use” and other action-objects. “Sculptures” were the contemplation-objects most commonly seen, accounting for 25% of the total, and a large number of these (41.8% of “Sculptures,” or 56/134) were handmade gifts presented by elementary school children and other visitors to the nursing home. There was virtually no correlation between decorations that could be definitively recognized as gifts and the ADL level of the owners ($r=0.171$).

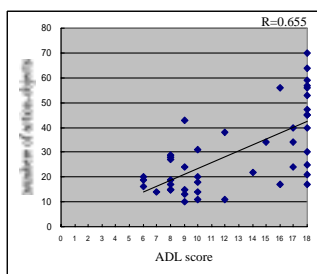


Fig.2 correlation between the number of action objects and ADL score

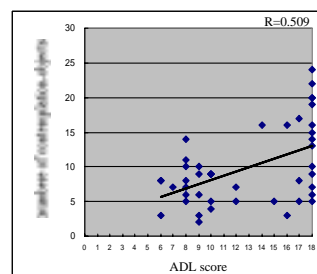


Fig.3 correlation between the number of contemplation objects and ADL score

4.4 Relationship with level of dementia

The correlation between act. -objects / cont. -objects and the degree of dementia is similar to the

correlation between these object types and ADL scores. This can be explained by the strong correlation ($r=0.797$) between the ADL scores of the survey subjects and their levels of dementia.

5. Discussion

5.1 ADL and belongings

The results of this study, which showed a high correlation between the number of action-objects owned and the ADL level, can be seen as a trend in which the ownership of objects used for a wide variety of daily lifestyle activities is limited by the individual's physical capabilities. At first glance, this appears to be a rational observation, but on closer reflection, it means that that types of daily lifestyle activities allowed to an individual by his or her environment are limited to those activities that are appropriate to the individual's current capabilities. In other words, even if there is a possibility that the individual's capabilities might increase, he is in a situation where the conditions that would allow him to demonstrate those capabilities are not provided by the environment. We should therefore assume that particularly in nursing homes that tend to have very few personal belongings on the whole, there is a problem in that a high correlation between ADL scores and the volume of objects owned is a hindrance to the possibility of improved ADL—and, by extension, to the maintenance and improvement of the quality of life—especially for residents with low current ADL levels.

In the case of contemplation-objects, because there was a wide variation in the number of objects owned even in the groups with high ADL scores, the correlation with ADL scores dropped somewhat. It could be said that the variation in the number of objects owned by the groups with high ADL scores is a result of the character of the individual or the strength of the individual's desire to decorate the room. Another view, however, is that the variation results from differences in how the individuals adapt to living in a "nursing home environment." According to Csikszentmihalyi & Rochberg-Halton, contemplation-objects are related to past memories and personal values, and thus have meaning in terms of enabling the owner to "confirm his or her own identity." In other words, the value for the individual is very significant, and it is not necessarily possible to make a judgment with regard to the quality of the environment simply from the number of objects observed. We can also assume that in some cases, photographs have been put away for safekeeping, and so did not appear in the survey. Further discussion on these issues will be required in the future.

5.2 Dementia and ownership

The relationship in the trends between level of dementia and ownership was found to be similar to the relationship between ADL level and "objects." These results support trends observed in the past, in which advancing levels of dementia bring about a reduction in daily activities and in the number of belongings related to the individual's habits. This situation is one factor that creates discontinuity between the current environment and the environment that the individual was familiar with for many

years, and can thus potentially result in a critical transition. This is because in the home, the individual is surrounded by a wide range of objects regardless of the level of dementia, while in the residential nursing home there is a direct negative correlation between the level of dementia and the number of these objects, and whenever the resident suffering from dementia attempts to carry out some activity that he or she had been doing regularly in the past, that individual is likely forced to recognize the absence of such objects (although it is difficult for others to comprehend what those actions are for). At the same time, as in the case of ADL, the above conditions should be considered problematic in that they restrict potential activity in the context of the daily activities of the senior suffering from dementia.

5.3 Placement of belongings

In this study, we observed a high correlation between ADL level and simple storage items. This correlation is supported by additional factors; for example that although residents are encouraged to temporary furniture into the nursing home, few do so actively, and that the room's décor is comprised of simple objects such as storage cases and other small items or even bags and cardboard boxes. According to Csikszentmihalyi and Rochberg-Halton (1981), Goffman (1974) pointed out that furniture does more than fulfill a physical function; it carries meaning as one of the "frames" for creating an experiential lifestyle space. We can predict that furniture will play a major role in establishing continuity in the individual residents' lives, and from this perspective, the conditions at nursing homes can hardly be considered favorable.

6. Summary and outlook for the future

Following is a summary of results derived from this study, and a discussion of future issues.

(1) Problems that are clearly evident from the characteristics of "belongings" of residents in the nursing home surveyed

(a) A correlation was seen between the volume of action-objects owned by individual residents that acted as subjects for the survey and the ADL and dementia levels of those individuals. Results showing a strong correlation between the number of action-objects and ADL levels indicate a tendency in this nursing home for the potential for activity in the context of daily life to be limited by the ADL level; given the low number of action-objects owned by residents, this can be considered a problem.

(b) On the other hand, there were many cases observed in which residents with high levels of independence stored their belongings using very simple methods, such as bags and cardboard boxes. This can be seen as raising problems in terms of the quality of the living environment.

(2) Environmental designs that support the creation of the resident's "object" environment

(a) Establish a physical environment that enables the resident to bring in a diverse range of "objects," and to make the room into a full and complete dwelling. Other factors that may be effective in accomplishing this include providing sufficient storage space, and designing the rooms with plenty of

space and in proportions that enable furniture to be positioned easily.

(b) In the case of residents with low levels of independence, it is particularly important to promote the creation of a full “object” environment. For individuals suffering from reduced physical functions, and whose condition makes it difficult to actively carry out daily activities, establish specific methods for maintaining the individual’s quality of life even after the move to the nursing home, or for providing “prescriptions” regarding the preparation objects that carry with them the possibility of increasing that quality of life.

(3) Appropriateness and significance of this approach as a method of evaluating nursing home environments. By looking at “objects” as a means of supporting daily activities, we have succeeded in objectively demonstrating trends in qualitative aspects of lifestyle environments—as well as the problems that are inherent within those trends—and have been able to discuss these issues. This approach is shown to be appropriate and significant as a method of evaluating nursing home environments from a qualitative perspective—a method characterized by objectivity and reproducibility.

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