

A Study on the Relationship Between Facility Form and End-of-life Care in Special Nursing Home for the Elderly

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Abstract

In Japan where low birthrate and longevity progressed, it was expected that special nursing home would play an important role as elderly's final home. However, since about 80% of people have passed away in the hospital even now, it is difficult to say that special nursing home has played the role. The special nursing home of two types is mixed. One is Conventional type with a large-scale care unit and multi-bedrooms, and another is Unit type with downsizing care units and private rooms. It becomes important to improve the special nursing home as elderly's final abode. As mentioned above, the purpose of this study is to clarify the relationship between facility form and end-of-life care, and to consider the optimal facility plan for elderly's final home, by the case study in the special nursing home of two types. It was clear that there was almost no difference in the end-of-life care system between two types, by the interview survey to the facility staff. In the case of Conventional type, elderly people coming to their end of life were transferred from the multi-bed room to the private room managed by the nursing staff before they received end-of-life care. In the case of Unit type, by contrast, elderly people continued being in their own private room and received end-of-life care. Moreover, the example for which elderly people used a bathroom and common space in nursing home just before death was often observed, and they spend the time together with their family in many cases. Therefore, it is thought that facility form has a certain influence on end-of-life care, and it is important to improve the living environment of special nursing home for the elderly.

Keywords: special nursing home unit-type facilities conventional type facilities end-of-life care facility form

1. Introduction

Special nursing home was founded as long-term care facilities for the elderly by the Welfare Act for the Elderly enacted in 1963. Furthermore, it was regulated also by the Long-Term Care Insurance Act enacted in 2000.

In Japan where low birthrate and longevity progressed, it was expected that special nursing home would play an important role as elderly's final home. However, since about 80% of people have passed away in the hospital even now, it is difficult to say that special nursing home has played the role. The special nursing home of two types is mixed. One is Conventional type with a large-scale care unit and multi-bed rooms, and another is Unit type

with downsizing care units and private rooms. It becomes important to improve the special nursing home as elderly's final abode.

There are many previous studies of elderly care facilities which investigated elderly people's life before the end-of-life period, and much useful data is accumulated in order to plan facility form. But, in the field of architectural planning, there is almost no studies which investigated elderly people's life of the end-of-life period.

As mentioned above, the purpose of this study is to clarify the relationship between facility form and end-of-life care, and to consider the optimal facility plan for elderly's final home, by the case study in the special nursing home of two types.

2. Method of This Study

This study is shown through an analysis of two different types of special nursing home. In order to

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clarify the relationship between facility form and end-of-life care, the following three surveys were carried out.

(1) Collecting the floor plans of two types

In order to clarify the difference of facility form, the floor plans of the different two types were collected.

(2) Questionnaire as to end-of-life care

A questionnaire as to end-of-life care was carried out in two facilities, in order to clarify the features, such as the number of the dead elderly people in each facility and the dead elderly people's age.

(3) Interview survey to care staff

In order to grasp the real state of end-of-life care and elderly people's life in the end-of-life period, an interview survey to care staff with nursing care records was done in two facilities.

3. Overview of Two Facilities for This Research

The outline and floor plan of two facilities for this research are shown in Table 1 and Figure 1, and the feature of each facility is described below.

(1) CA is a conventional type of a special nursing home with multi-bed rooms. It is located in mountainous area and was established in 1987 by a social welfare corporation. It has 12 rooms for 4 people and 1 double room. Medical care is offered once or twice per week by the doctor of the neighborhood clinic located in the place of about 5 minutes by car. In CA, the end-of-life care plan is planned by giving top priority to the hope of elderly

people and family.

(2) UO is a unit type of a special nursing home with private rooms. It is located in urban area near with private rooms. It is located in urban area near the seat of Yamaguchi prefectural government. Since it was established in 2016 by a social welfare corporation which was related to a hospital, it was built in the same building as a hospital. It consists

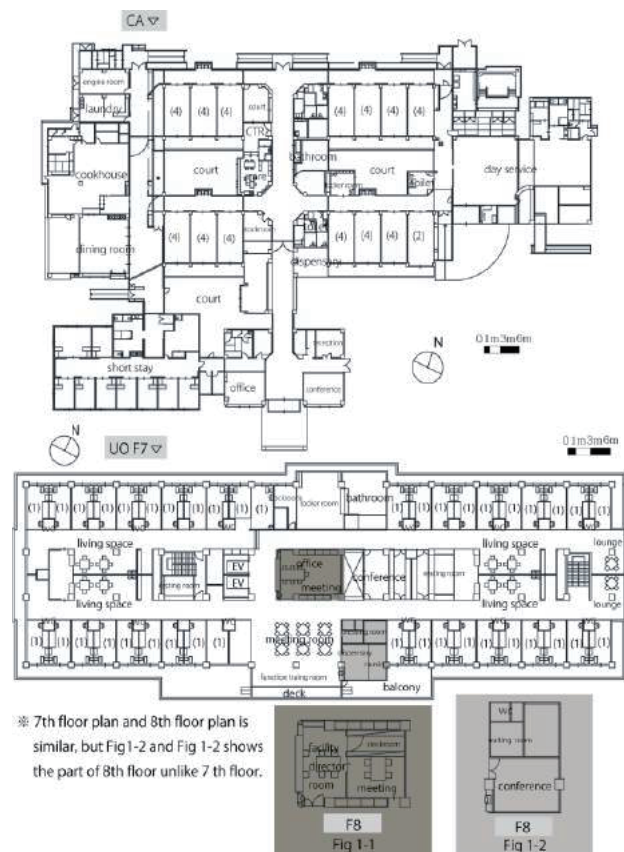


Figure 1. Floor Plan of Two Facilities

Table 1. Overview of Two Facilities for This Research

research facilities	CA	UO
established years	1982	2016
capacity of facility	50	80
the number of units and the capacity of 1 unit	none unit	7th floor : 40(4units) 8th floor : 40(4units)
number of rooms and capacity of rooms	13(room for 4 people : 12 + duple room : 1)	private room : 80
nurse call	○	○
care treatment room used for end-of-life care	○	×
morgue	×	×
room for family's accommodation	×	×
family's accommodation in the facility	○	○
frequency of consultation by doctor	once or twice per week	once or twice per week
room for nursing staff	○	○
room for care staff	○	○
care staff	22	39
nurse	3	3
placement of doctors	a temporary doctor	a temporary doctor
distance to hospital	The clinic is located in the place about 5 minutes by car.	It exists in the same building
special response of doctor in holiday and night time	×	×
doctor's policy for end-of-life care	positive	positive
facility's policy for end-of-life care	positive	positive
special shift in the end-of-life care period	none	none

of 8 units, and 9 to 11 elderly people requiring care per 1 unit are living. Medical care is offered once or twice per week by the doctor of the hospital in the same building. The end-of-life care plan of CA and UO is similar plans in the point of giving top priority to the hope of elderly people and family.

4. The Number of Dead Elderly People and Feature of Them

Table 2 shows the number of elderly people and their dead place dying in each facility. In facility CA, 19 elderly people were dead in 2012 and all the members died in CA. In 2013, 7 elderly people were died and all the members died in CA. In 2014, almost all the members died in it except 2 elderly people who died in a hospital and other facility. Since there were many elderly people who died in CA for three years, it is considered that CA provided elderly people with end-of-life care positively. In UO, one elderly person was dead in 2015. He didn't die in UO, but returned to his own house and died. 11 people were dead in 2016, 4 people died in UO and 7 people died in the hospital of the same building. In 2017, 1 person died in the hospital. Since UO was established four years ago and was comparatively new, the number of elderly people who died in UO was smaller than CA. However, it is easy in UO to make medical treatment and care cooperate, because it was built in the same building with the hospital. Therefore, UO as well as CA is going to offer end-of-life care positively.

Table 3 shows the cause of elderly people's death in each facility. In CA, there were 2 people who died of cerebrovascular disease and there was each one person who died of diseases such as heart disease, pneumonia, senility, kidney failure, and acute adrenal insufficiency. In UO, there were 4 people who died of heart disease and 6 people who died of senility, and there was one person who died of cancer. Since the doctor who determines the cause of death is different in two facilities, the cause of death in each facility also has a different tendency. The cause of death in UO is a large number of pneumonia and heart failure, and the cause of death in CA is various.

Table 4 shows the age at the time of death. In CA, there was one person who died from his 80's and there were 7 people who died from their 90's, and

Table 2. The Number of Elderly People and Their Dead Place

facility	death place	2012	2013	2014	total
CA	facility	19	7	19	45
	hospital	0	0	1	1
	home	0	0	0	0
	etcetera	0	0	1	1
facility	death place	2015	2016	2017	total
UO	facility	0	4	0	4
	hospital	0	7	1	8
	home	1	0	0	1

Table 3. The Cause of Elderly People's Death in Each Facility

cause of death	CA	UO	total
cancer	0	1	1
cerebrovascular disease	2	0	2
heart disease	1	4	5
pneumonia	1	0	1
senility	1	6	7
accident	0	0	0
etcetra	2	1	3
obscure	1	0	1

Table 4. The Age at the Time of Death

age	CA	UO	total
60~69	0	0	0
70~79	0	3	3
80~89	1	7	8
90~99	7	7	14
over100	0	0	0

the ratio of those who died from his 90's was high. In facility UO, 3 people died from their 70's, 7 people died from their 80's, and 7 people died from their 90's. The number of the persons in his 80's and his 90's was the same.

5. Room in Which End-of-life Care was Offered

Generally, in the end-of-life period in a conventional type of a special nursing home with multi-bed rooms, a care staff tends to transfer an elderly person from a multi-bed room to a private room called a care treatment room. Therefore, table 5 and Figure 3 shows the transfer of dead elderly people in CA.

In CA, 7 elderly people died in 2014, 6 people were transferred from a multi-bed room to a care treatment room, and 1 person was transferred from a multi-bed room to another multi-bed room. It was 0 to 11 days from the transfer day to the dying day.

Photograph 1 and Photograph 2 show the interior of a care treatment room. The care treatment room is located in the center of CA and adjacent to the nurse and care staff room in order to correspond to sudden change of elderly health. Moreover, the care treatment room is equipped with a sofa bed so that elderly people's family can stay.

On the other hand, in UO, since all the rooms were private rooms, elderly people were not transferred from a private room to a care treatment room in the end-of-life period and were provided with end-of-life care in their own rooms by the care staff.



Photo 1,2 Interior of the care treatment room

Table 5. The Transfer of Dead People in CA

facility	case	before	after	end-of-life care period
CA	CA1	roomG	care treatment room	7 days
	CA2	roomG	care treatment room	5 days
	CA3	roomC	care treatment room	2 days
	CA4	roomC	roomJ	3 days
	CA5	roomB	care treatment room	10 days
	CA6	roomL	care treatment room	7 days
	CA7	roomF	care treatment room	1 day

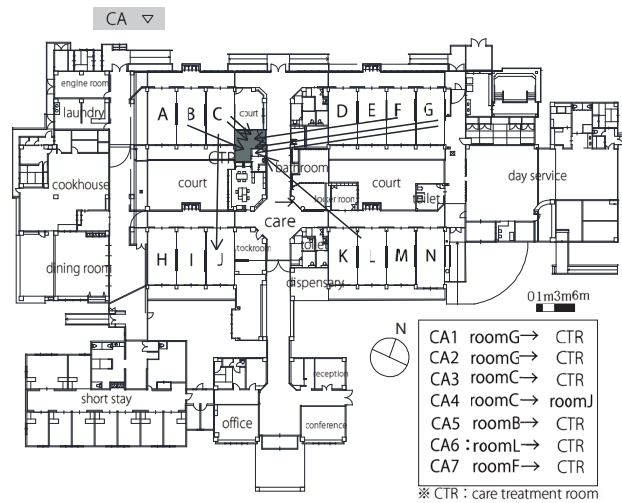


Fig 2. The Floor Plan Drawing the Transfer of Dead Elderly People

Table 6. Elderly People's Life in the End-of-life Care Period

day	---	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21
UO1					○			○				○			○				○	
UO2				○			▲○				○	▲			○			▲	○	
UO3															▲			▲		
UO4					○		○				○	▲	▲	▲○	▲	▲	▲	▲○	▲	
UO5															○	▲				○
UO6					○	●		○	●	●		○	●		○	●			○	●
CA1		○			○	▲		○				▲	○▲			○				○
CA2				▲	○			○				○	▲		○				○	
CA3				○			○▲				○			○						
CA4																○▲				○
CA5				○		○				○				○			○			
CA6		○			○			○		▲	▲	▲	▲	▲		▲	▲	▲	▲	▲

death date	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
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○ taking a bath ■ using a living and dining room ▲ family's visit ● having the favorite food and drink ▨ disease discription □ hospitalization

6. Elderly People's Life in the End-of-life Period

It is important to grasp elderly people's detailed life in the end-of-life period in order to consider the relationship between facility form and end-of-life care. The situation of elderly people's life which was acquired by the interview survey and the nursing care records is shown in Table 6.

The family's visit of elderly people in both facilities increased about 30 days before elderly people died, and there was almost no difference of the number of family's visits between CA and UO. Although there was no family's visit in the case of UO1 because UO1 had no family, there were several family's visits in all the cases except UO1.

As for the number of times taking a bath, they can usually take a bath twice per week in both facilities. In UO, until just before they die, there is almost no change of the number of times taking a bath. On the other hand, in CA, the number of times taking a bath extremely decreased about 14 days before they passed away.

Some important behaviors were observed in only UO. One is the behavior that elderly people's family brings their favorite food and drink for elderly people. This behavior was observed frequently in the case of UO6. Another is the behavior that elderly people used the shared living and dining room until just before their death. This behavior was observed frequently in the case of UO2 and UO4. It is thought that these behaviors were observed because there was no relocation of a residential room in the end-of-life period and living environment of Unit type was improved more than Conventional type.

7. Conclusion

In this paper, the case study of end-of-life care was carried out in two different types in order to clarify the relationship between facility form and end-of-life care. The findings in this paper are as Table 6. Elderly people's life in the end-of-life care period follows.

(1) In UO classified into Unit type, there was no relocation of a residential room in the end-of-life period. Elderly people were provided with end-of-life care and passed away in their own private room. On the other hand, in CA classified into Conventional type, there was much relocation.

Namely, the care staff transferred elderly people from a multi-bed room to a private room called a care treatment room in the end-of-life period, and provided elderly people with end-of-life care. In order that all rooms are a multi-bed room in Conventional type and other elderly people of the same room may worry about end-of-life care, the staff needs to transfer the elderly in the end-of-life period to a private room. However, since all rooms are a private room in Unit type and other elderly people don't worry about end-of-life care, elderly people don't need to have relocation and are provided with end-of-life care in their own private room. It is considered that facility form is related to the room transfer in the end-of-life period.

(2) In two facilities of different type, the different behavior of elderly people in the end-of-life period was observed. Though elderly people could take a bath twice per week in UO until just before they died, the number of times that they take a bath in CA decreased extremely about 14 days before they passed away. Moreover, though the behavior that elderly people's family brings their favorite food and drink for them was observed in UO, this behavior could not be observed in CA. From these results, the possibility that facility form may affect elderly people's life in the end-of-life period is suggested. Living environment in Unit type is improved rather than Conventional type because there are a shared living room and dining room per one unit. It is important that the continuity of elderly people's life before and after the end-of-life period was maintained in order to improve elderly people's quality of life in the end-of-life period.

Future issues are increasing the number of case studies in order to generalize the consideration acquired in this study.

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