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# **The Study on the Subjective Life Satisfaction That the Elderly Perceives in Long-term Care Facility and on the Influence Factors**

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## **ABSTRACT**

The objectives of this study are to evaluate influences of environmental factors in elderly long-term care facility on life satisfaction of the elderly who live in the facility; to derive major determinants that affect level of life satisfaction; and thus to provide fundamental information for use in improving life satisfaction of the elderly in currently operating long-term care facilities as well as newly constructed elderly long-term care facilities. This study targeted at 252 of the elderly with age of 56 or greater who lived in the long-term care facility located in D city. The collected data in this study were statistically analyzed using SPSS20.0 program. As results, it was observed that among sociodemographic determinants, gender, religion, and state of health affected life satisfaction. Second, environmental factors showed significant impact on elderly life satisfaction. In terms of the basic environment, amenities had statistically significant impact on odor management, so did health management in structural environment. Third, integrated model presented significant impact on life satisfaction of the elderly living in facility. Based on the aforementioned study findings, this study suggested regulatory measures to improve life satisfaction of the elderly who are living in long-term care facility.

## **I. Introduction**

Population aging is a phenomenon that human beings have not experienced since prehistory (Laslett, 1995). Such phenomenon can be observed in Korean society as well. Since life quality in Korean society has been improved due to economic development and average lifetime of people has markedly increased owing to medical science, such as prompt aging process during a short time period in Korea has been considered as general phenomena. As the population aging became general, the elderly requiring cares increased and social involvement of female has been expanded, caring the elderly became a social matter and a discussion for socialization of elderly care was raised. In accordance with such discussions, social agreement was formed and in Korea, Elderly Long-term Care Insurance Law was enacted in 2007 and started to be implemented in the next year.

In 2011, a survey on state of the elderly exhibited that among activity of daily living and instrumental activity of daily living items, 76.3% of the elderly that received assistance in more than one of the items

were cared by family. In other words, 23.7% did not receive cares. Among those who provided care, family's care was the highest (72.1%), external service was 11.4%, and both family care and external service were 13.1%. Among those who received care, external service was 24.5%, indicating it has significantly increased since the elderly long-term care insurance policy was adopted (Korea Ministry of Health and Welfare). This kind of social trend can be also observed from the increase of elderly welfare facility. Elderly welfare facility has shown drastic increase since the elderly long-term care insurance policy. According to the Korea Ministry of Health and Welfare's 2013 Status of Elderly Welfare Facility, the numbers of elderly medical welfare facilities and the elderly living in the facilities dramatically increased from 1,832 and 81,262, respectively in 2008 to 4,352 and 133,692, respectively in 2012. Especially, the survey reported that elderly care facilities were 2,610 with 118,631 elders, suggesting there was a size difference between elderly care public family life and elderly specialized hospital. From these facts, large number of the elderly are living in elderly care facility and the size is expected to be expanded. The explosive increasing trend of elderly care facility is regarded as positive advantage to the elderly that need care and their families in Korea where family-oriented trend is being weaker and weaker. However, it is needed to think whether or not the happiness of the elderly is secured as the elderly care facility increases. Various media has revealed that many elderly care facilities over-compete with each other and they focus on only effective operation of facilities.

To the elderly, long-term care facility is the last resting place. Being admitted into the facility is an important event to the elderly because their admission is associated with bad health, financial problems, and death of spouse that occur in the later phase of their lives. The foreign previous studies found that the admission into the care facility can lead the elderly to physical, social and psychological changes (Amer, 1996). The most serious matter is that many of the elderly are forced by their family member's decision to be admitted into facility regardless of their intention. This can be viewed as a life crisis that the elderly have to undergo (McAulery, Pecchioni and Grant, 1999; McAuley and Travis, 1997; Reinardy, 1995). After elderly people get admitted, they tend to experience confusion, anxiety, depression, loneliness, insomnia, withdrawal, dependence, loss, fatigue, and so on (Pamela, 1995). This is as serious as it was registered with the diagnosis name of "Relocation Stress Syndrome" (NANDA: North American Nursing Diagnosis Association Classification Scheme, 2001). And also, as compared to the elderly who use elderly home care facility, those who reside in long-term care facility have low level of life satisfaction due to the unsociability of the facility (Kang, 2008). In serious case of the unsatisfactory life in long-term care facility, some elders ended up with maladjustment aspects like attempting to commit suicide or committing suicide (Kaisik and Ceslowitz, 1996). Likewise, to the elderly who dwell in long-term care facility, their life satisfaction closely relies on degree of service quality that the facility provides. Therefore, for the happiness of the elderly living in the facility, it is important to investigate their life satisfaction. Recognizing this issue, academia has been actively conducting various studies regarding life satisfaction of the elderly who live in elderly care facility (Kim et. al, 2002; Oh et. al, 2007). Those existing studies asserted that professional care has to be provided on the basis of respected human rights of the elderly living in the facility. This is clearly valuable. However, the limited basic assumption of these existing studies was that high quality of hardware-related service, that is, environmental factors of

the long-term care facility was already well-established. In fact, National Health Insurance Corporation's yearly survey pointed out, in their evaluation of long-term care facility, that there were many facilities that were not in compliance with environmental requirements and thus needed significant improvement. Nonetheless, those facilities still ignore the fact that environmental elements of the facility are essential to elderly life satisfaction, and put emphasis on only software-relevant service.

Hence, The objective of this study is to evaluate influences of environmental factors in elderly long-term care facility on life satisfaction of the elderly who live in the facility; to derive major determinants that affect level of life satisfaction; and thus to provide information concerning residence-related welfare for use in improving life satisfaction of the elderly in currently operating long-term care facilities as well as newly constructed elderly long-term care facilities.

## **II. Theoretical Background**

### **1. Life satisfaction**

The concept of life satisfaction has been generalized and used as an academic word since Neugarten et al. (1961) developed Life Satisfaction Index. Neugarten (1961) defined life satisfaction as "status of passion, decision and perseverance, consistency between expected goal and achieved goal, positive self-concept, and feelings". George (1979) referred to life satisfaction as to evaluate the status of one's existence by comparing the thing that one expected and the thing that one achieve at present. Meanwhile, there are some viewpoints to take such approaches that life satisfaction is a major factor that determines mental health. Meldy, 1976 stated that expectation is formed on the basis of interaction of an individual with others and that by comparing with others the individual evaluates him or herself. Yang (1994) defined that satisfaction of life is personally perceived and subjectively determined with respect to how much a person is satisfied with his or her life. Likewise, life satisfaction is a very complicated concept and it is not easy to induce an agreement from scholars. Life satisfaction is used in combination with the concepts of "quality of life" and "subjective stability". This is most likely because the meaning of the word, "life satisfaction" is comprehensive and abstract.

However, the eventual goal of welfare service for the elderly is the elderly life satisfaction. Therefore, to accomplish enhancement of elderly health and promotion of stable life, as indicated in Item No. 1, Article No. 1 of the Elderly Long-term Care Insurance Law, elderly care facility, the goal to honor the rights of the elderly living in care facilities should be always aimed.

### **2. Determinants affecting on life satisfaction of facility-resident elders**

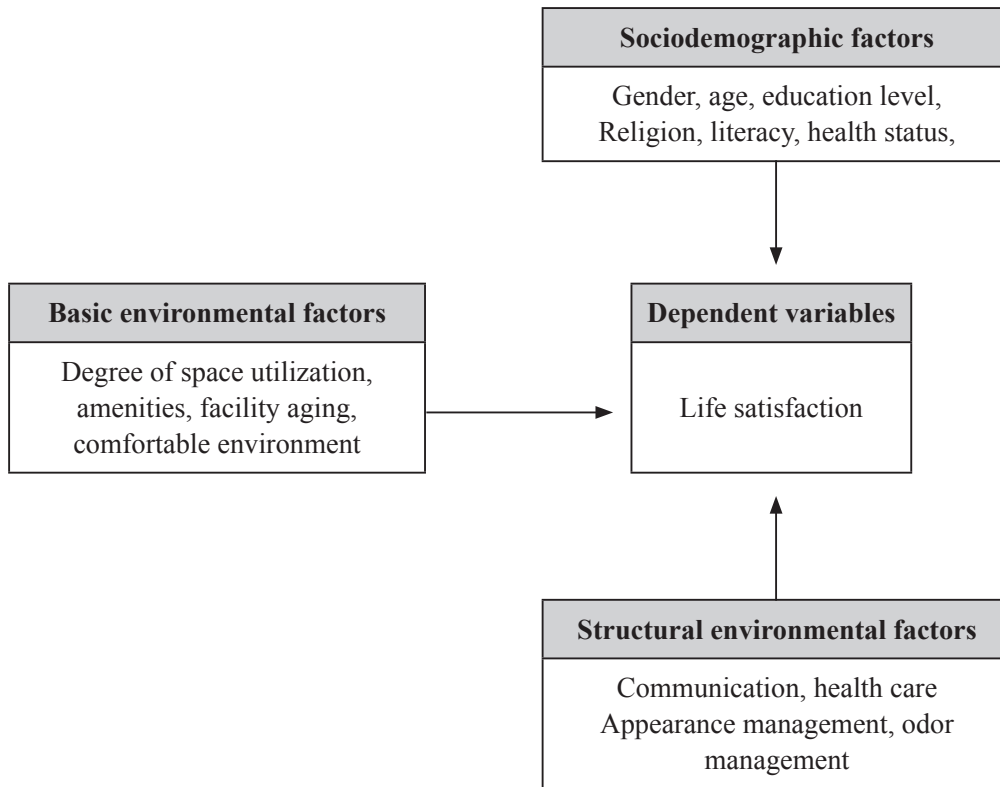
The elderly are admitted to the facility because they have difficulties in living daily life that are caused from the impairment or injuries in recognition and physical function. In contrast, degrees and types of individual disability, interest and preference, cultural background, social class, educational background, and income and occupation are diverse (Guse and Masesar, 1999). And religions affect positively on elderly life (Kim and Park, 2000); reduce depression and psychological stress (Kim, 2004; Cheon, 2004; Idler, Kasl and Hays, 2001); correlate with low death rate and low prevalence rate as more religious activities are made (Wagner and Lorion, 1984; Levin, 1996); assist the elderly in maintaining physical

and mental health as well as quality of life (Seo, 2010). The aforementioned personal characteristics and sociodemographic characteristics are reported to be the factors that influence life satisfaction of facility-resident seniors. In the meantime, facility environment was believed to be an important factor that affects life satisfaction of facility-resident elders. Especially physical environment and quality of service have been suggested as significant elements for life-satisfaction of the elderly who live in facility (Moon, 2007; Fry, 2000). Noelker and Harel (1978) confirmed that the more convenient facility correlates with the higher life satisfaction of the elderly. In that sense, long-term care facilities should provide facility environment where the elderly can perceive themselves as the people who control their environment (Kim, 2008). For instance, the facilities let the elderly make decision for daily life matters, exercise time, bath time and so on. And alternatively the elderly can reposition the furniture in their rooms in whatever ways they prefer. Or if a room is shared, facilities should support the individual private life to be secured (Kim, 2008). These kinds of results can be predicted objectively. Since life of facility-resident elders is controlled by uniformed facility rules within limited specific space, quality of service related to the physical environment and care of facility is considered to have a direct association with elderly life quality (Lee and Song, 2012). Particularly in Korea, as long-term care insurance policy was implemented in 2008, freedom of facility construction resulted in sharp increase in number within short time period. As a result, provider-center market environments were formed and it triggered overheated competition among facilities (Choi et al., 2011; Lee and Song, 2012). However, most of previous studies placed an emphasis on the perspective of relationship with surrounding people who are related to the facility-resident elders. This indicates that when the previous studies conducted research to improve life satisfaction of the elderly living in facility, they left out physical environment in facility. Therefore, the characteristic of this study that is different than other previous studies is to examine relationship between life satisfaction of the elderly living in long-term care facility and physical environment of the long-term care facility.

### III. Methodologies

The subjects of this study were selected with the elderly with age of 65 or above who were admitted to elderly long-term care facility. The survey methodology was to use questionnaire. Survey period was 20 days between Oct. 15, 2013 and Nov. 5, 2013. As survey methods, for the elderly who could read words, questionnaires were distributed and collected, while for those who had difficulties in reading a surveyor that was educated by researcher in advance conducted one to one individual interview.

## 1. Research model



**Figure 3-1 Research Model**

## 1. Establishment of Hypothesis

Hypothesis 1: According to sociodemographic factors, the facility adaptation will be affected.

Hypothesis 2: Among the environmental factors, basic environmental factors will affect the facility adaptation of the elderly.

Hypothesis 3: Among the environmental factors, structural environmental factors will affect the facility adaptation of the elderly.

## 2. Definition of factors

**Table 3-1 Compositional contents of measurement tool**

| Major variables       |  | Sub-variables          |
|-----------------------|--|------------------------|
| Dependent variables   | Life satisfaction  |                        |
|                       | Life satisfaction of the elderly aged care facility entrance                       |                        |
| Independent variables | Sociodemographic factors   |                        |
|                       | Environmental factors  | Basic environment      |
|                       |  | Structural environment |
|                       | Degree of space utilization, amenities, facilities, aging, comfortable environment |                        |
|                       | Communication, health care, appearance management, odor management                 |                        |

To identify general characteristic of survey subjects, among the independent variables, the measuring tool was composed of gender, age, religion, education, health, and literacy which are responded in the responder's information. And for the environmental factors, questions for the basic environmental factors comprised of five questions about comfortable environments, four questions for degree of space utilization, four of amenities, and four of facility aging. Questions for structural environmental factors are six questions for communication, six for health management, two for appearance management, and two for odor management. Lastly, questions for life satisfaction of dependent variable consisted in 20 questions.

**Table 3-2 Credibility of measurement tool**

| Types                   | Questions    | Cronbach' $\alpha$ |
|-------------------------|--------------|--------------------|
| Life satisfaction       | 20 questions | .847               |
| Basic satisfaction      | 17 questions | .778               |
| Structural satisfaction | 15 questions | .932               |

#### 4) Data analysis methods

The data collected in this study were analyzed using SPSS 20.0. The analyses used in this study are as follows: Cronbach'  $\alpha$  is adopted to test reliability of the questionnaire used in this study. To understand control factors (sociodemographic factors), frequency analysis and technical analysis were performed. To investigate impact of environmental factors on life satisfaction, multiple regression analysis was executed.

### III. Analysis Results

#### 1. The general characteristics of the surveyed

As results, it was found that the gender distribution of the surveyed include 173 females (68.7%) and 79 males (31.3%). In terms of age distribution of the surveyed, the numbers of the elderly with age of 80's , 70's, 90's and 70 or less were 124 (49.2%), 76 (30.0%), 30 (12.0%) and the rest, respectively. This indicates that average age of the elderly admitted was very high. Religion distribution is composed of 120 seniors of Christianity (47.6%), 80 of atheists (31.7%), Buddhist, Catholic, and others in that order. Education levels showed 162 elders of no school background (64.3%), 62 of elementary school graduation (24.6%), middle school graduation, college graduation or above, and high school graduation in that order, suggesting education level of the elderly in the facility was low in general. And the literacy ability of the elderly admitted to the facility exhibited 128 of no literacy ability (51.6%), 22 of literacy ability (48.4%) proposing that although education level was low, absence and existence of literacy ability appeared similarity of distribution. The health state that the elderly personally felt showed 146 seniors of bad health (57.9%), 60 of normal health (23.8%), very bad, healthy, and very healthy in that order. This confirms that the health conditions that the elderly subjectively felt was not good and periodic health exam is needed for the elderly admitted.

**Table 4-1 General characteristics of the surveyed**

| Classes  |              | The elderly admitted |           | Others | Classes         |               | The elderly admitted |           | Others |
|----------|--------------|----------------------|-----------|--------|-----------------|---------------|----------------------|-----------|--------|
|          |              | Frequency (N)        | Ratio (%) |        |                 |               | Frequency (N)        | Ratio (%) |        |
| Gender   | Male         | 79                   | 31.3      | N=252  | Literacy        | Yes           | 122                  | 48.4      | N=250  |
|          | Female       | 173                  | 68.7      |        |                 | No            | 128                  | 51.6      |        |
| Age      | 70 or less   | 22                   | 8.8       | N=252  | Education level | No school     | 162                  | 64.3      | N=252  |
|          | 70's         | 76                   | 30.0      |        |                 | Elementary    | 62                   | 24.6      |        |
|          | 80's         | 124                  | 49.2      |        |                 | Middle School | 10                   | 4.0       |        |
|          | 90 and above | 30                   | 12.0      |        |                 | High School   | 8                    | 3.2       |        |
| Religion | Atheism      | 80                   | 31.7      | N=252  | Health state    | Very healthy  | 4                    | 1.6       | N=252  |
|          | Christianity | 120                  | 47.6      |        |                 | Healthy       | 8                    | 3.2       |        |
|          | Buddhism     | 40                   | 15.9      |        |                 | Normal        | 60                   | 23.8      |        |
|          | Catholic     | 10                   | 4.0       |        |                 | Bad           | 146                  | 57.9      |        |
|          | Others       | 2                    | 0.8       |        |                 | Very Bad      | 34                   | 13.5      |        |

## 2. Characteristics of Environmental Factors

### 1) Basic Environment

Among environmental factors of facility, the basic environments including degree of space utilization, facility aging, amenities, and comfortable environments were investigated. The Table 4-3 as below presents basic environmental factors.

- (1) In regard to degree of space utilization, the question of “whether there is a safe space where the elderly can wander around inside” was given 4.02 on average; “whether there is a safe space where the elderly can wander around outside” received average of 3.71; “the elderly can use anywhere in the building” had 3.68 on average; and “the elderly can get outside often” ranked 3.42. From this result, the degree of space utilization of elderly care facility is appropriate.
- (2) For the questions pertaining to facility aging, “safety equipments in public areas of room and hallway” was given 4.64 on average; “state of building, floor, and furniture” received average of 4.20; “areas where public activities are possible” had 4.20 on average; and “brightness of room or hallway” ranked 4.17 on average. Overall they responded that facility aging was slow.
- (3) For the questions about amenities, “whether to be satisfied with the distance between room and cafeteria” was given 1.68 on average; “safety of equipments including public equipments, hand knobs, hallways, etc.” received average of 1.65; “room size, air conditioning and heating, air circulation, and light penetration” had 1.62 on average; and “satisfaction with overall sanitation of facility” ranked 1.62 on average. Overall, the elderly responded to amenity questions with low rates.
- (4) In response to questions regarding comfortable environments, “whether facility and home give the same feeling” was given 4.15 on average; “whether visitors can be found” received 4.10 on average; and “whether pets or living animals can be found in facility” had average of 1.57, indicating very low rate. This is most likely associated with the limited aspect of facility in managing private part. Most of elderly care facilities consist in public residence space instead of practical residence space.



**Table 4-3 Basic Environmental Factor among the environmental factors (N=252)**

| Questions                   |  | 최소값 | 최대값 | 평균   | 표준편차  |
|-----------------------------|--|-----|-----|------|-------|
| Degree of space utilization | Is there space inside where the elderly can wander around?   | 1   | 5   | 4.02 | .783  |
|                             | Is there space outside where the elderly can wander around?  | 1   | 5   | 3.71 | 1.030 |
|                             | Can the elderly go outside often?  | 1   | 5   | 3.42 | 1.150 |
|                             | Can the elderly use anywhere in the building?  | 1   | 5   | 3.68 | 1.091 |
| Facility aging              | Is the space where public activities are possible safe?  | 1   | 5   | 4.20 | .716  |
|                             | Is there safety equipments in hallway and elderly room?  | 1   | 5   | 4.64 | .537  |
|                             | Are the state of building, floor, and furniture safe?  | 1   | 5   | 4.21 | .717  |
|                             | Is the brightness of room and hallway appropriate?   | 1   | 5   | 4.17 | .725  |
|                             | Is the facility building safe to use?  | 1   | 5   | 4.21 | .621  |
| amenities                   | Are you satisfied with room size, air conditioning and heating, and light penetration?             | 1   | 4   | 1.62 | .614  |
|                             | Are you satisfied with the facility's overall sanitation?  | 1   | 4   | 1.62 | .574  |
|                             | Are you satisfied with the distance between room and cafeteria and facility safety?                | 1   | 4   | 1.68 | .654  |
|                             | Are you content with safety of equipments including public equipments, hand knobs, hallways, etc.? | 1   | 4   | 1.65 | .625  |
| Comfortable environments    | Is the room of the elder filled with objects reflecting past memories?                             | 1   | 5   | 2.36 | 1.421 |
|                             | Can pets or living animals be observed in the facility?  | 1   | 5   | 1.57 | .911  |
|                             | Are the state of pets and living animal healthy?   | 1   | 5   | 3.24 | 1.32  |
|                             | Does the facility give the same feeling as home?   | 1   | 5   | 4.15 | .832  |
|                             | Can visitors be found in the facility?   | 1   | 5   | 4.10 | .777  |

## 2) Structural environments

### (1) Communications

Table 4-4 describes communications of the surveyed after their admissions to elderly care facility. In regard to communications, “whether the facility employees speak respectful words to the elderly” was given 4.32; “whether the facility employees treated the elderly in a respectful way” received 4.2 on average; “whether the elderly had conflict with the employees” obtained 4.19; and “if the caring attitude of employees is positive” was rated with 4.12 on average. This presents high rate of average in communications overall, indicating smooth communication in relationship between facility employees and the elderly admitted.

### (2) Health management

For the questions concerning health management, “If the facility nurses (nurse assistants) were found often” was given 4.65 on average; “whether the nurses knew the elderly well and cared for them in person” received average rate of 4.31; “if the employees had manners when they talked with the elderly” obtained average rate of 4.07; “whether the employees helped the elderly drink water or drinks” was rated with 3.83 on average; and “if the employees accompanied the elderly when they walked or moved” had average rate of 3.56. This result suggests that facilities provided very active services for health management of the elderly.

### (3) Appearance management

In response to appearance management questions, “whether the elderly wore cloths in a clean and smart way” was given average rate of 4.13; and “if the appearance of the elderly was well-maintained” received 4.04 on average. This result is consistent with the recent other studies’ findings that appearance management programs in facilities have produced positive effects on the elderly admitted to the facilities.

### (4) Odor management

With respect to odor management, “whether to smell discomforting smell” was given average rate of 1.87; “if urine (feces) smells in facility” received average rate of 1.75, indicating very low rate. This low rate is believed to stem from the reason that the elderly responded in a very negative way to biological matters in particular. Therefore, facility is required to make effort to address these issues.

**Table 4-4 Structural Environmental Factor among the environmental factors (N=252)**

| Questions |  | Max | Min | Average | SD    |
|-----------|--|-----|-----|---------|-------|
| 의사소통      | Do you feel comfortable in taking with employees?          | 1   | 5   | 4.12    | .711  |
|           | Are the employees using respectful words?                  | 1   | 5   | 4.32    | .517  |
|           | Do the employees seem to know your health conditions well? | 1   | 5   | 4.17    | .644  |
|           | Do you have conflicts with the employees?                  | 1   | 5   | 4.19    | .599  |
|           | Are employees’ caring attitudes positive?                  | 1   | 5   | 4.19    | .612  |
|           | Do the employees treat you in a respectful mind?           | 1   | 5   | 4.20    | .576  |
| 건강관리      | Can you see the nurses (assistant nurses) often?           | 1   | 5   | 4.65    | .505  |
|           | Do the nurses know you well and care for you in person?    | 1   | 5   | 4.31    | .678  |
|           | Do the employees help you when you drink something?        | 1   | 5   | 3.83    | .988  |
|           | Do the employees accompany you when you walk or move?      | 1   | 5   | 3.56    | 1.170 |
|           | Do the employees have manner when you talk with them?      | 1   | 5   | 4.07    | .624  |
| 외모관리      | Are you wearing clothes in a clean and smart way?          | 1   | 5   | 4.13    | .625  |
|           | Is your appearance well-maintained?                        | 1   | 5   | 4.04    | .745  |
| 약취관리      | Do you smell urine or feces in facility?                   | 1   | 5   | 1.75    | 1.002 |
|           | Do you smell other discomforting smell in facility?        | 1   | 5   | 1.87    | 1.012 |

### 3. Analysis on environmental factors affecting life satisfaction

For multicollinearity diagnosis, variance inflation factor in standard regression was tested. The resulting values converged all to 1 and presents that existence of multicollinearity is very low. If the variance inflation factor (VIF) is, in general, greater than 10, multicollinearity is considered to exist. However, in this study, the multicollinearity does not need to be doubted. Table 4-5 denotes environmental factors affecting life satisfaction.

First, the relationship between sociodemographic factor and life satisfaction showed that explanation power R<sup>2</sup> was 39.6%, and suitability of model, F value was 4.912 (significance level P<.000), suggesting a statistically significant impact. Religion, gender, and health condition of the elderly in facility presented positive effect while age, education background, and literacy of the elderly in facility observed no significance. Among environmental factors, with regard to the impact of basic environmental factor on life satisfaction of the elderly in facility, 33.7% of R<sup>2</sup> and 3.777 (significance level P<.000) of the

model suitability F value demonstrate a highly statistical significance. Among the basic environmental factors, amenities showed the most significant impact, whereas degree of space utilization, facility aging, and comfortable environment had no significant impact. This tendency is a little bit biased from the existing studies. Among the environmental factors, regarding the influence of structural environment on life satisfaction of the elderly in facility, 19.5% of R<sup>2</sup> and 1.820 (significance level P<.050) appeared statistical significance. Out of the structural environments, health management and odor management had high level of significance while appearance management and communication had no statistical significance. In terms of the impact of integrated model on life satisfaction of the elderly in facility, 58.1% of R<sup>2</sup> and 10.210 (significance level P<.000) of model suitability F value indicate a statistically significant impact. Religion, health condition, health management had a statistical significance while the rest factors presented no significances. These results provide insights that life satisfaction becomes high as the elderly have religions, their personal health conditions are good, and health is well-managed.

**Table 4-4 multiple regression analysis with environmental factors (basic and structural environments) affecting life satisfaction**

| Factors               | Life satisfaction        |                    |                         |                  |
|-----------------------|--------------------------|--------------------|-------------------------|------------------|
|                       | Sociodemographic factors | Basic environments | Structural environments | Integrated model |
|                       | B(SE)                    | B(SE)              | B(SE)                   | B(SE)            |
| Gender                | 1.793(.775)*             |                    |                         |                  |
| Age                   | .069(.045)               |                    |                         | -4.793(2.486)    |
| Religion              | 1.018(.388)**            |                    |                         | .064(.142)       |
| Education             | -.288(.391)              |                    |                         | 3.425(1.237)**   |
| Literacy              |                          |                    |                         | -.664(1.241)     |
| Health                | -1.150(.784)             |                    |                         | -3.758(2.514)    |
|                       | .810(.398)*              |                    |                         | 3.091(1.264)**   |
|                       |                          |                    |                         | -.115(.724)      |
| Space use             |                          | .122(.220)         |                         | .986(.894)       |
| Facility aging        |                          | -.349(.273)        |                         | 1.434(.838)      |
| Amenities             |                          | .659(.252)**       |                         | .254(.288)       |
| Comfort               |                          | .019(.088)         |                         | .394(.362)       |
|                       |                          |                    |                         | 2.487(.896)**    |
| Communication         |                          |                    | .207(.120)              | 1.807(1.805)     |
| Health management     |                          |                    | .934(.298)***           | -1.314(1.457)    |
| Appearance management |                          |                    | .648(.363)              |                  |
| Odor management       |                          |                    | 1.117(.482)*            |                  |
| Constant              | 18.023                   | 10.629             | 12.605                  | 84.073           |
| R <sup>2</sup>        | .396                     | .337               | .195                    | .581             |
| F                     | 4.912***                 | 3.777***           | 1.820*                  | 10.210***        |

P < 0.05, \*\* P < 0.01, \*\*\* P < 0.001

#### IV. Conclusion

The objectives of this study are to evaluate influences of environmental factors in elderly long-term care facility on life satisfaction of the elderly who live in the facility; to derive major determinants that affect level of life satisfaction; and thus to provide fundamental information for use in improving life satisfaction

of the elderly in currently operating long-term care facilities as well as newly constructed elderly long-term care facilities. To accomplish these objectives, a survey of life satisfaction was conducted targeting the elderly residing in elderly care facility and impact factors depending on sociodemographic characteristics and facility environment-related characteristics were analyzed.

The results are as follows. First, sociodemographic factor had significant impact on life satisfaction of the elderly in facility. In details, gender, religion, and health conditions showed effects on life satisfaction. This result substantiates the finding of Markids and Marin (1979) study. And religion exhibited impact on life satisfaction, confirming the findings of Ellison (1991) study that religions strengthen subjective stability. And also, Palmore and Luikart (1972) reported that life satisfaction of the elderly, in fact, can be accounted by the health conditions that the elderly subjectively perceive. Second, environmental factors presented significant impact on life satisfaction of the elderly. In terms of the basic environments, amenities turned out to have very significant influence. And among the environmental factors, with respect to the structural environments, health management and odor management appeared a statistical significance. This result agrees with the results of Lee and Song 's study (2012) reporting that quality of service to provide physical environment and protection is more important than family support. Third, the integrated model demonstrated a significant impact on life satisfaction of the elderly in facility.

Based on these results, elderly long-term care facilities should endeavor to form basic environments to improve life satisfaction of the elderly living in facilities. The suggestions are as followings: First, on the basis of well-maintained religious activities as well as acquirement of needed space to strengthen religious activities, an appropriate program needs to be developed through in-depth analysis on satisfaction achievement of the existing program and related requirements. Second, sound measures and prevention plans should be developed through periodic management of health conditions of the elderly in facility. Third, regulations relevant to standard amenity installation have to be strengthened by clarifying detailed standard amenities when permitting long-term care facility. Forth, a standard manual for the structural environments and basic environments should be formed so that consistent environments can be pursued. From the overall standpoint, in order to improve life satisfaction of the elderly who live in elderly care facility, environmental factors regarding the aspect of residential welfare should be regarded as to be important. In such way, environmental factors of facilities are viewed from the position of the elderly in facility who are the real owner of a happy elderly life. However, the existing studies have focused on relational perspectives or mainly conducted status research based on limited items. Hence, the environmental aspects of facility should be taken into consideration. Expansion of not only software-related service but also hardware-related service is required to assist the elderly in facility in living their elderly lives in comfortable and peaceful circumstances. Therefore, amendment and supplementation on the current system of item evaluation are required in issuing permission for facility construction or additional installation so that objective and comprehensive evaluation on residential environments of facility can be conducted. In this way, the life satisfaction of the elderly living in long-term care facility is expected to be elevated.

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