

The degree of satisfaction toward the elderly scaling care service program in public health centers.

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Abstract

The oral health of the elderly is lost or weakened due to economic poverty and systemic diseases. The purpose of this study was to evaluate the satisfaction toward elderly scaling and to identify factors that affect scaling satisfaction in improving the oral health of the elderly. This survey was conducted between Feb. 11th to Dec. 23th 2016, and the subjects in this study were 202 elderly people who received scaling in the public health center. The respondents are generally female (70.8%), have an occupation (14.4%), and have health insurance (67.8%). In terms of health, the respondents have hypertension (33.25%), experience inconvenience in mobility (3.5%), have diabetes (18.8%), and are afflicted with other diseases (42.1%), and, in oral health, the number of remaining teeth at 22-28 was the largest among the elderly. Also, the elderly responded positively toward mobility (90.6%), necessity of scaling (61.9%), and use of dentures (43.6%). Tooth brushing was most frequent after breakfast, but the least frequent before bedtime. The elderly who received scaling was mostly satisfied with it (96.5%). The satisfaction toward elderly scaling was significantly associated with insurance application ($p < 0.05$). Largely, the elderly is in favor of participation (99.5%) As a result, the elderly who received scaling in public health centers were satisfied with the program. Therefore, a public oral health project can be implemented continuously and developmentally to promote elderly oral health.

Keywords: Elderly, Satisfaction, Scaling project, Oral health.

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Introduction

In the modern society, when there is an extension of the average life span and a decrease in the fertility rate, various social problems have emerged as the society gradually enters the superaged society beyond the aged society. In 2000, the number of elderly people in South Korea reached about 3.39 million, which was over 7% of the total population, thus entering the aged society. Currently, the number of elderly people has increased to 5.6 million, which is 11.8% of the total population. The Korean society is expected to become a fully aged society in 2020, and then become a superaged society in 2030, in which the elderly population would account for 20% of the total population [1]. Due to the change in the proportion of the population, there is an urgent need for diverse cultural and financial supports, as well as economic assistance and medical welfare, for the elderly who have become socially marginalized. Social efforts have been required in solving the various problems of the elderly, and, as part of such efforts, the necessity for an elderly dental health care project to promote

and maintain the dental health of the elderly is emerging in the aspect of healthcare [2].

Periodontal disease has been reported as a major oral disease and has been responsible for tooth loss after middle age, with 10% to 15% of the adult population worldwide suffering from such disease [3]. The oral health of the elderly people is seriously threatened by dental caries and periodontal disease [4], and the loss of oral health also affects general health because elderly people have difficulties in food intake due to the loss of many teeth or oral diseases [5]. In general, elderly people without teeth often complain of gastrointestinal disturbances and indigestion [6]. Moreover, among the elderly population, masticating ability is lowered due to the loss of teeth, and discomforts occur, such as functional restriction or pain caused by dentures. As a result, the selection range of foods becomes narrow, and the quantity and quality of meals may decline, which makes the elderly feel lethargic in their daily lives, and makes it difficult for them to maintain health lives due to insufficient nutritional intake [7].

Therefore, various policies for the elderly according to field have been planned and implemented at the national level. In particular, the Ministry of Health and Welfare is conducting an elderly denture project and elderly fluoride application-scaling project as part of the oral health project for the aged population through the human resources of public health centers. They have become important welfare projects for the elderly aged 65 years or older, as well as the second classes. The elderly oral health project must be able to improve the oral health of the elderly and enhance their quality of life in relation to oral health [8]. Moreover, financial support for diseases such as social security for the elderly has been reported as a factor in improving the health of the elderly [9]. The oral health project that is currently being conducted only provides uniform basic services, and various projects must be developed by considering the oral diseases and health conditions of the elderly. However, even the basic data for such extensive projects have not yet been organized in Korea's health policy.

This study aimed to investigate the oral health of the elderly population who visited public health centers, to identify the association between systemic health and oral health after examining systemic health via interviews, and to prepare basic data to evaluate the elderly oral health project and seek a future direction by examining the degree of satisfaction with the current project.

Materials and Methods

Study subjects

In this study, oral health checkup and fluoride application-scaling were performed on 202 elderly people, aged 65 years or older, who visited a health center in Busan, and participated in the elderly fluoride application-scaling project from February 11, 2016 to December 31, 2016. Then, a survey was conducted on the beneficiaries of the project.

Study methods

This study was conducted through an oral checkup and a survey that included items about the general characteristics of the subjects, the status of systemic and oral health, degree of satisfaction with the project, and intention to participate again.

Statistical analysis

Frequency analysis was conducted to investigate the general characteristics of the subjects and systemic and oral health. Correlation analysis was performed to identify associations among the satisfaction with the elderly fluoride application-scaling project that was conducted at a public health center, general characteristics of the subjects, and systemic and oral health. SPSS and PASW statistical software version 19.0 (IBM, Armonk, NY, USA) were used for analyses, and P-values of <0.05 were considered statistically significant.

Results

General characteristics of the study subjects

Among 202 elderly people who participated in the study, 143 (70.8%) were females, and 59 (29.2%) were males. In terms of employment, only 29 (14.4%) had an occupation. In terms of health insurance, 137 (67.8%) were covered by health insurance, 51 (25.3%) were covered by medical aid, and 14 (6.9%) were not covered by health insurance (Table 1). Table 2 shows the result of the presence of systemic disease among the elderly participating in the study. Among 202 elderly people, 67 (33.25%) had hypertension; 7 (3.5%) experienced discomfort in mobility; 38 (18.8%) had diabetes; and 85 (42.1%) were afflicted with other diseases.

Table 1. General characteristics of study subjects.

Division	N (%)
Sex	
Male	143(70.8)
Female	59(29.2)
Occupation	
Yes	29(14.4)
No	173(85.6)
Sign the form of Medicare	
Health Insurance	137(67.8)
Medical aid	51(25.3)
Non-participation	14(6.9)

Table 2. Systemic disease of study subjects.

Division	N (%)
Hypertension	
Yes	67(33.2)
No	135(66.8)
Movements	
Possibility	195(96.5)
Impossibility	7(3.5)
Diabetes	
Yes	38(18.8)
No	164(81.2)
Other disease	
Yes	85(42.1)
No	117(57.9)

Table 3. Oral health status of study subjects.

Division	Frequency (persons)	Percentage (%)
Number of remaining tooth		
No	11	5.4
1-7	22	10.9
8-14	45	22.3
15-21	48	23.8
22-28	66	32.7
Over 29	10	5.0
Masticating possibility		
Possibility	183	90.6
Impossibility	19	9.4
Remove dental calculus		
Need	125	61.9
Needless	77	38.1
Wearing dentures		
Yes	88	43.6
No	114	56.4

As a result of examining oral health through an oral health checkup, the average number of remaining teeth among the elderly was between 22-28 teeth (32.7%), a fairly common trait. In terms of masticating ability, 186 (90.6%) answered that they are able to chew properly. On the need for scaling, 125 (61.9%) answered that it was necessary to remove dental calculus. On the question if they were wearing dentures, 88 (43.6%) answered yes, and 114 (56.4%) answered no (Table 3).

For the multiple response question on what time do they brush their teeth during the day, 180 respondents answered that they brush their teeth after breakfast, which was the most common response, while 16 respondents answered that they brush their teeth before bedtime, which was the least common response (Figure 1).



Figure 1. The tooth brushing time of day.

Satisfaction with the elderly scaling project

More than half of the elderly (56.9%) responded that they were very satisfied with the elderly fluoride application-scaling project, while 39.6% were satisfied, indicating that the level of satisfaction was 96.5% (Table 4).

Factors affecting the satisfaction toward the elderly scaling project

Table 5 shows the correlations between the general characteristics of the study subjects and the satisfaction with the project. The correlations with the project satisfaction were 0.059 and 0.087 in sex and occupation, respectively, while health insurance had a correlation of 0.146 with the satisfaction, which was statistically significant at a significance level of 5%.

Table 4. Satisfaction research of scaling for elderly people.

Devison	Frequency (persons)	Percentage (%)
Very satisfactory	115	56.9
Satisfactory	80	39.6
Average	7	3.5
Unsatisfactory	0	0
Very unsatisfactory	0	0
Unawareness	0	0

Table 5. Relation between General characteristics of study subjects and satisfaction of scaling project.

Variables	P-value
Sex	0.059
Occupation	0.087
Sign the form of Medicare	0.146*

Table 6 shows the correlations between systemic health and satisfaction with the project. The correlations with the satisfaction were 0.034, 0.036, -0.007, and -0.079 in hypertension, discomfort in mobility, diabetes, and other diseases, respectively. None of them were statistically significant.

Table 6. Relation between systemic disease of study subjects and satisfaction of scaling project.

Variables	P-value
Hypertension	0.034
Movements	0.036
Diabetes	-0.007

Other disease	-0.079
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Table 7 shows correlations between oral health and satisfaction with the project. The correlations with the satisfaction were -0.057, 0.005, 0.075, and -0.125 in the number of remaining teeth, masticating ability, removal of dental calculus, and wearing of dentures, respectively. None of them were statistically significant.

Table 7. Relation between oral health status of study subjects and satisfaction of scaling project.

Variables	Satisfaction
Number of remaining tooth	-0.057
Masticating possibility	0.005
Remove dental calculus	0.075
Wearing dentures	-0.125

Table 8. Reparticipatory intention of scaling project for elderly people.

Devision	Frequency (persons)	Percentage (%)
Yes	201	99.5
No	1	0.5

Re-participatory intention in the elderly scaling project

For the item related to re-participation in the project, with the exception of one person, 201 (99.5%) respondents answered that they were willing to participate again in the project (Table 8).

Discussion

The oral health of the elderly is lost or weakened due to economic poverty and systemic diseases. Urgent efforts are required at the national level to solve the problem, and the elderly oral health project is necessary to improve the quality of life of the elderly [10]. Therefore, this study analyzed the associations between personal characteristics and oral health by evaluating the satisfaction of the elderly, who are the beneficiaries of the elderly fluoride application-scaling project conducted by the Korean government. A total of 202 subjects participated in the study, and, among them, 70.8% were females, thus higher than the proportion of males, and only 14.4% of the elderly had an occupation. The proportion of the elderly who were covered by health insurance was high (67.8%), but 25.3% were beneficiaries of medical aid, and 6.9% were not covered by health insurance. This result implies that the elderly people are facing economic difficulties, causing a social problem in which some elderly could not receive health care benefits.

Health status was classified into the presence of typical systemic diseases and oral health. In terms of systemic

diseases, 33.25% had hypertension; 3.5% had discomfort in mobility; 18.8% had diabetes; and 42.1% were afflicted with other diseases, indicating that most of the elderly have one or more systemic diseases affecting their health. Additionally, in terms of oral health, the most common number of remaining teeth was 22-28, which is slightly higher than the number of natural teeth in the elderly aged 65-74 (18.0 teeth) in the 2010 National Oral Health Survey [10]. On the other hand, 61.9% answered that removal of dental calculus was necessary, meaning that they had many remaining teeth. A large proportion of the elderly (90.6%) were able to chew, but it seems a result of a superficial question because the in-depth question on the degree of discomfort in chewing was not included. The proportion shows a difference from the result of Jang et al. [11] in which 65.5% answered that they experienced difficulty in food intake. As for dentures, 43.6% answered that they are currently wearing dentures, which is similar to the 59.6% in the study of Ahn et al. [12].

Tooth brushing is the most basic method of preventing dental caries and periodontal disease, and is the basis of oral hygiene management in all ages [13]. Therefore, Paik et al. [14] reported that if the oral cavity is kept clean by thoroughly removing dental plaque and its byproducts, progression to periodontal disease can be prevented, and resistance to infection can be increased as tooth brushing improves the blood circulation of the gingiva. With regard to the time of tooth brushing during the day, tooth brushing after breakfast (89.4%) was the most common practice, while tooth brushing before bedtime (7.9%) was the least common practice. Most of them considered tooth brushing after breakfast important, but skipped tooth brushing before bedtime, which may result in the formation of plaque during sleep, and consequently causing periodontal disease and dental caries. Furthermore, when comparing it with the study of Kim et al. [15], showing that the average daily frequency of tooth brushing was found to be less than two times in 23.4% of the elderly, the result of this study implies that the elderly do not accurately know the correct method and time for tooth brushing. It is considered that the national oral health project must include tooth brushing education so that the elderly can practice the correct tooth brushing method to ultimately increase the number of the natural teeth of the elderly and to prepare an oral disease prevention project.

A total of 56.9% of the elderly who participated in the elderly fluoride application-scaling project responded that they were very satisfied with the project, while 39.6% were satisfied, suggesting that the elderly fluoride application-scaling project conducted as part of the national oral health project is a very appropriate and accessible project for the poor elderly. As a result of the analysis of the association between the general characteristics of the subjects and satisfaction with the project, the correlation between health insurance and satisfaction was 0.146, which was statistically significant at a significance level of 5%. This study showed that the satisfaction with the elderly fluoride application-scaling project was associated with health insurance. Kang et al. [2] emphasized that the main demands of the elderly included livelihood security and medical security.

As for livelihood security, the National Pension Policy has established a foundation, but medical security is still very vulnerable in reality. Furthermore, Lim et al. [16] reported that general health had a significant difference depending on the type of medical security. Lee [17] showed that the medical aid beneficiaries had a worse oral health status compared to health insurance recipients, suggesting that the elderly people with health insurance benefits manage their oral health more effectively among the available types of medical security. Other studies have also found that more prostheses were needed for medical aid recipients than health insurance recipients [10], because the cost of maintaining oral health is too high for the elderly with less economic activity. Therefore, since economic status affects the health of the elderly, basic welfare for the elderly should be provided, and the need for extensive elderly welfare policies is emphasized not only for insured persons but also for medical aid beneficiaries and non-insured persons.

Moreover, considering the fact that most of the respondents (99.5%) showed re-participatory intention, it is necessary to expand and develop the project more systematically and widely while maintaining the goals of the current project. To maintain and develop the elderly fluoride application-scaling project of this study, it is necessary to expand the project to the socially vulnerable classes, and institutional supports must expand the coverage and scope of the National Health Insurance to benefit more elderly people. Additionally, further studies must be conducted to provide preventive and therapeutic methods for various diseases that may affect oral health through multifaceted analysis and to improve elderly oral health. However, since this study was conducted on elderly people living in Busan, it is difficult to generalize the result due to the possibility of regional difference. Also, when considering the fact that the respondents to the questions were elderly, there are limitations in that the standard is ambiguous, and the response may be subjective. Despite these limitations, this study is significant for focusing on the oral health of elderly people who are neglected and disadvantaged, and it will be important data for the development of a national policy in the future.

Conclusion

This study aimed to obtain basic data for promoting future elderly oral health by identifying the general characteristics and health status of elderly people aged 65 years or older, who participated in the elderly fluoride application-scaling project conducted by the Ministry of Health and Welfare, and by investigating their satisfaction with the project and re-participatory intention. In terms of the general characteristics of the subjects, there were more females (70.8%) than males. Only 14.4% of the elderly had an occupation, and 67.8% of the elderly were covered by health insurance. With regard to the health status of the study subjects, 33.25% of the elderly had hypertension; 3.5% experienced discomfort in mobility; 18.8% had diabetes; and 42.1% were afflicted with other diseases. In terms of oral health, the number of remaining teeth was 22-28, which was the most common among the elderly. Moreover,

90.6% were able to chew, which was a very high proportion, 61.9% responded that it is necessary to remove dental calculus, and 43.6% answered that they are wearing dentures. The respondents were most likely to brush their teeth after breakfast (89.4%) during the day, and least likely to brush their teeth before bedtime (7.9%). In terms of the subject's satisfaction with the elderly fluoride application-scaling project, 56.9% were very satisfied and 39.6% were satisfied, showing that their degree of satisfaction is quite high. In terms of the associations between the general characteristics of the subjects and project satisfaction, health insurance showed a significant correlation with satisfaction (0.146, $p < 0.05$). Likewise, 99.5% of the subjects intended to participate anew in the elderly fluoride application-scaling project.

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References

1. Kim JJ, Kim J. A Study of health care system housing and environment of the elderly. *J Korea Inst Electron Commun Sci* 2012; 7: 925-930.
2. Kang HK, Song HJ, Lee EK. Study on actual condition of oral hygiene among admitted aged persons at the some of Gyeongnam welfare facilities. *J Korean Acad Dental Hygiene Education* 2007; 7: 1-13.
3. Petersen PE, Ogawa H. Strengthening the prevention of periodontal disease: the WHO approach. *J Periodontol* 2005; 76: 2187-2193.
4. Gwon MY, Won YS, Kim YS. The study on the status of the elderly oral health and food habits. *J Korean Soc Dent Hyg* 2009; 9: 13-24.
5. Gwon MY, Young JY. A study on the relationships between the oral health activities and oral health conditions of the elderly. *J Dent Hyg Sci* 2006; 6: 271-276.
6. Chung SS. Nutrition support methods in elderly patients. *J Clin Nutr* 2014; 6: 7-10.
7. Slade GD, Spencer AJ. Development and evaluation of the Oral Health Impact Profile. *Community Dent Health* 1994; 11: 3-11.
8. Kim NH, Kim HD, Han DH, Jin BH, Paik DI. Relationship between perceived oral symptoms and perceived oral health status among the elderly in welfare institutions in Seoul. *J Korean Acad Dent Health* 2006; 30: 141-150.
9. Avlund K, Holm-Pedersen P, Morse DE, Viitanen M, Winblad B. Social relations as determinants of oral health among persons over the age of 80 years. *Community Dent Oral Epidemiol* 2003; 31: 454-462.
10. Lim HJ, Lee EK. Factors influencing the number of remaining natural teeth in elderly people visiting dental care services. *J Korean Soc Dent Hyg* 2013; 13: 693-700.
11. Jang SH, Choi MH. Original Article: Evaluation of the quality of Life related to oral health among elderly people

- in some elderly care facilities by OHIP-14. *J Korean Soc Dent Hyg* 2011; 11: 475-487.
12. Ahn KS, Ji MK. A Study of Factors of Oral Health Diseases among the Elderly. *J Korean Acad Dent Hyg* 2008; 8: 73-84.
13. Lee SS, Sim JE. A study on the oral health care of elderly people in some local communities. *J Korean Acad Dent Hygiene* 2010; 12: 127-136.
14. Paik DI. Knowledge, attitude, and practices about dental caries among Koreans. *J Korean Acad Oral Health* 1993; 17: 1-12.
15. Kim JY, Kim JB. Effect of the lifestyle and oral health behavior of elderly people on the colony forming units of mutans streptococci, *Lactobacillus*, *candida albicans*. *J Korean Acad Oral Health* 2007; 31: 115-123.
16. Lim JY, Park J, Kang MG, Ryu SY. Quality of life and its associated factors among some elderly residents using a hall for the aged in a community. *J Prev Med Public Health* 2007; 40: 337-344.
17. Lee GR. The impact of DMFT index on oral health related quality of life in community-dwelling elderly. *J Korean Acad Oral Health* 2008; 32: 396-404.

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