



A STUDY ON THE KNOWLEDGE AND ATTITUDE ON WATER FLUORIDATION PROGRAM AMONG UNIVERSITY STUDENTS IN BUSAN

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ABSTRACT

This study investigates and analyzes the perception of university students, who will be major policy makers in Korea, and the factors that affect their favor or opposition of the project, to awaken the importance of the project and actively support it. This study was conducted to lay the foundation for cultivating the right knowledge and attitude to manage oral health efficiently. From April 20 to May 28, 2018, a mobile questionnaire was used for 131 university students in Busan area, and the collected data were used for the SPSS (Statistical Package for the Social Science) 24.0 program to determine general characteristics of the research subjects. Frequency analysis, cross-tabulation, and independent sample T-test was performed to investigate the relationship between awareness of oral health for favor and opposition to the fluoride concentration adjustment project in tap water, awareness and favor or opposition of the fluoride control project in public health and non-healthcare groups. The average oral health awareness of the subjects in favor of the tap water fluoride concentration adjustment project was 65.08 points, and the oral health awareness of those who opposed the project was 57.07 points. 90.6% of the subjects who were aware of the tap water fluoride concentration adjustment project were from the public health department.

KEYWORDS: Dental caries, recognition, community water fluoridation, health science college student.

INTRODUCTION

1. Background and necessity of research

With the improvement of people's standard of living and the development of medical technology, various desires for health are increasing, and along with this, interest in oral health, which is an essential element of health maintenance, is also increasing. Dental caries is one of the most common causes of tooth loss and one of the most frequent oral diseases^[1] In order to reduce dental caries, a tap water fluoride concentration adjustment project that controls the fluorine concentration in tap water can be considered as a method that is safe, economical, and most practical, and can achieve a significant effect of preventing dental caries.^[2]

A method using fluoride to prevent dental caries was developed as a result of many investigations and studies over a long period of time. In the first half of the 20th century, it was known that an excessive amount of fluoride intake caused spotty teeth, but an appropriate amount of fluoride intake not only did not cause spotting teeth but also prevented dental caries, and a method using fluoride was introduced to prevent dental caries.^[3]

The method of using fluoride to prevent dental caries is largely divided into a fluoride intake method and a fluoride application method. Fluoride intake methods include tap water fluoride concentration adjustment method, school water fluoride method, and fluoride tablet intake method. Among them, the tap water fluoride concentration adjustment project is the most economical, effective and safe dental caries prevention method.^[4]

Countries around the world have been using the fluoride concentration adjustment project to prevent dental caries since 1945, and it is known that 60% of US citizens and 70% of Australians and New Zealanders benefit from the fluoride concentration adjustment project. In Korea,^[5] the fluoride concentration adjustment project for tap water was first started in Jinhae in 1981, and it was expanded to various places including Ulsan Metropolitan City, Gwacheon City in Gyeonggi-Do, and Seosan City in south Chungcheong-Do but in 1998, due to the opposition to the water fluoride concentration adjustment project introduced from abroad, the implementation area was on the decline. However, the safety issue argued by some opponents of the fluoride concentration adjustment project in tap water is confirmed through numerous studies that the project is not harmful to the human body,

and concerns about increase fractures have also been confirmed to be unrelated through a recent systematic epidemiological studies.^[6]

According to Jinhae, Gyeongsangnam-Do study, 6-year-old children who entered elementary school in 1992, the first year of the fluoride concentration adjustment program in tap water has stopped, until 1997 when the project was resumed, followed up study for 6 years of the incidence of dental caries. As a result, it was argued that the preventive effect of dental caries by the tap water fluoride concentration adjustment project was reduced, and that dental caries could increase again if the tap water fluoride concentration adjustment project was discontinued. From this point of view, it can be said that the tap water fluoride concentration adjustment project should be expanded nationwide and continuously. However, all current tap water fluoride concentration adjustment project have been suspended. In order to start the tap water fluoride concentration adjustment project, the public opinion of local residents must be actively reflected in accordance with the Oral Health Act. Accordingly, local governments are using public opinion of local residents as a decision-making tool for project implementation. As the public opinion of the local residents becomes important in the implementation of the fluoride concentration adjustment project in tap water, research on the awareness of the local residents on the fluoride concentration adjustment project in tap water should be conducted actively.

This study investigates and analyzes the perception of the tap water fluoride concentration adjustment project and the factors that affect whether the project is in favor or opposition of university students who belong to the youth oral health subject, who will be the leaders of the future society and major policy makers in Korea. Through this, it was conducted to lay the foundation for

university students to awaken the importance of the fluoride concentration adjustment project in tap water in the future and actively support it to cultivate the right knowledge and attitude to manage oral health efficiently.

RESEARCH SUBJECTS AND METHODS

1. Research subject and period

From April 20 to May 28, 2018, university students in Busan were randomly selected. The purpose of the study was explained, and 131 people were selected as final subjects, excluding insincere responses.

2. Research methods and evaluation

Data collection was carried out by distributing Naver form (mobile) questionnaires to survey subjects, and the collected data were analyzed using SPSS (Statistical Package for the Social Science) 24.0 program. The analysis method is to find out the general characteristics of the research subjects, the relationship between oral health awareness and favor or opposition of the fluoride concentration adjustment project in tap water, awareness of the fluoride concentration adjustment project in tap water between health and non-health groups, and whether they are in favor of or opposition to the fluoride concentration adjustment project in tap water. Frequency analysis, cross-tabulation, and independent sample T-test were conducted to find out the favor and opposition to the tap water fluoride concentration adjustment project.

RESEARCH RESULTS

1. General characteristics of study subjects

Among the total of 131 subjects were 48 males (36.6%) and 83 females (63.4%), and the age distribution was 26 of 20 years old (19.8%), 21 of 21 years old (16.0%), 26 of 22 years old, 21 of 23 years old (16.0%), 23 of 24 years old (17.6%), 3 of 25 years old (2.3%), and 11 of 26-32 years old (5.62%).

Table 1: General characteristics of study subjects.

Characteristic	Sort	Frequency(person)	Percentage (%)
Gender	Male	48	36.6
	Female	83	63.4
Age	20	26	19.8
	21	21	16.0
	22	26	19.8
	23	21	16.0
	24	23	17.6
	25	5	2.3
	26~32	11	5.62

2. Relationship between Oral Health Awareness and in favor and opposition of tap water fluoride concentration adjustment project

Table 2 shows the in favor and opposition of the subjects' oral health awareness and the fluoride concentration adjustment project in tap water. The

average oral health awareness of the subjects in favor of the tap water fluoride concentration adjustment project was 65.08 points, and the oral health awareness of the subjects who opposed it was 57.07 points. The higher the oral health awareness score, the higher the consent of the tap water fluoride concentration adjustment project.

Table 2: Oral health awareness and in favor and opposition of tap water fluoride concentration adjustment project.

		Recognize	Not recognize	Total
Tap water fluoride concentration adjustment project	In favor	44(60.3%)	29(39.7%)	73(100.0%)
	opposition	9(17.0%)	49(84.5%)	58(100.0%)

3. Comparison of subjects' majors and awareness of tap water fluoride concentration adjustment project

Subjects' majors were divided into health and non-health majors. There were 95 subjects classified as health-

related, and 36 non-health related subjects (Table 3-1). A total of 53 subjects were aware of the tap water fluoride concentration adjustment project, of which significantly appeared as 90.6% were health-related and 9.4% were non-health related (Table 3-2).

Table 3-1: Classification table for health and non-health majors.

Health related department	Non-health related department
Nursing Radiology Clinical physics Occupational Therapy Health and behavior Dental hygiene	Hotel Management
	Hotel and Tourism
	Industrial Management Engineering
	Early Childhood Education
	Hospital management
	Security
	French Language and literature
	Food service management
	Physical education
	Business Administration
	Exercise prescription
	International Tourism
	Tourism management
	Accounting
	International Trade
Law	
International secretary	
Polymer Engineering	
Event Convention studies	

Table 3-2: Cognitive relationship with the tap water fluoride concentration adjustment project according to the subject group.

	Total	Recognize	Not recognize
Health related department	95(100.0%)	48(50.5%)	47(49.5%)
Non-health related department	36(100.0%)	5(13.9%)	31(86.1%)
Total	131(100.0%)	53(40.5%)	78(59.5%)

4. Awareness of the fluoride concentration adjustment project in tap water and the relationship between in favor or opposition of the fluoride concentration adjustment project in tap water.

As a result of examining the relationship between the awareness of the research subject and the in favor or opposition of the fluoride concentration adjustment project in tap water (Table 4), out of 73 people who are in favor, 44 were aware and 29 were unaware. Of the total 58 people who opposed, 9 were aware and 49 were unaware, showing a very large difference.

Table 4:

	Recognize	Not recognize	Total
In favor	44(60.3%)	29(39.7%)	73(100.0%)
Opposition	9(17.0%)	49(84.5%)	58(100.0%)

Consideration

As a result of this study, a total of 131 subjects were studied, with 48 males (36.6%) and 83 females (63.4%), with approximately 30% more females. In addition, the age distribution was 26 of 20 years old (19.8%), 21 of 21 years old (16.0%), 26 of 22 years old, 21 of 23 years old (16.0%), 23 of 24 years old (17.6%), 3 of 25 years old (2.3%), and 11 of 26-32 years old (5.62%), showed a large difference between the maximum of 29.8% (20 years old) and the minimum of 2.3% (25 years old).

As a result of surveying opinions for the tap water fluoride concentration adjustment project, 73 were in favor and 58 were against. However, 54 people answered that they are not sure, so it is considered that active publicity and education on the fluoride concentration adjustment project in tap water is necessary.

As a result of surveying the opinions for the tap water fluoride concentration adjustment project according to oral health awareness, the average oral health awareness of the subjects in favor of the tap water fluoride concentration adjustment project was 65.08 points, and the oral health awareness of those who opposed it was 57.07 points. This is a result consistent with the hypothesis of this study that the higher the oral health awareness, the higher the consent of the tap water fluoride concentration adjustment project. Through the results, it is judged that in favor rate should be increased through correct education on the oral health awareness of the subjects and the fluoride concentration adjustment project in tap water.

As a result of examining whether subjects were aware of the tap water fluoride concentration adjustment project according to their major, a total of 53 subject were aware of it, of which 90.6% (48 people) were in the health related department and 9.4% (5 people) were in the non-health related department. This is a result that publicity of the fluoride concentration adjustment project in tap water and correct education are urgently required in non-health departments, as the number of health related subjects is much higher than that of non-health related subjects. If the correct knowledge is cultivated during the student or youth period, it will have a direct impact on the approval of the future tap water fluoride concentration adjustment project.

As a result of examining the relationship between recognition, in favor and opposition of the tap water fluoride concentration adjustment project, 44 people were aware and 29 were unaware of the total 73 people who agreed. On the other hand, of the total 58 people who opposed, 9 were aware and 49 were unaware, showing a very large difference between the two results. This is a result that proves the hypothesis of this study that the lower the awareness of the fluoride concentration adjustment project in tap water, the higher the opposition to the project. Through this, in order to prevent dental caries through the fluoride concentration adjustment project in tap water, it can be said that education and promotion of the fluoride concentration adjustment project in tap water are very necessary.

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