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The Relationship between Speech Problems and Chewing Problems due to Oral Health Problems and Unmet Dental Medical Needs

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ABSTRACT

This study was conducted to investigate the association between oral health problems, such as speech and chewing difficulties, and the status of dental treatment in adults, with a focus on understanding the relationship. Utilizing data from the 7th Korea National Health and Nutrition Examination Survey, the study analyzed a weighted sample of 13,998 adults aged 19 and above, excluding missing values. Chi-square tests and logistic regression analyses were employed for the investigation.

Regarding speech problems due to poor oral health, the group responding 'not at all uncomfortable' had a significantly lower rate of unmet dental care needs compared to the group responding 'very uncomfortable', with an Odds Ratio (OR) of 2.819 (P-value: <.0001). Similarly, for chewing problems, the group responding 'not at all uncomfortable' had a much lower rate of unmet dental care needs compared to the 'very uncomfortable' group, with an OR of 7.507 (P-value: <.0001). The results of this study indicate that as the severity of speech and chewing problems due to poor oral health increases, the rate of unmet dental care needs also increases. Particularly, a strong association was observed between dental treatment and the group responding 'very uncomfortable'. Therefore, it is suggested that systematic and policy-oriented management measures are needed to improve dental care for groups experiencing high severity in speech and chewing problems. This study aims to provide foundational data for addressing and enhancing dental care for those experiencing serious speech and chewing difficulties.

1. Introduction

With the development of the fourth industrial revolution, medical technology has advanced, and

the improvement of the quality of life has led to an increased focus on health among the population (Shin, 2011). This progress in medical technology and improved living conditions has resulted in a steady increase in the average life expectancy of the population, contributing to the phenomenon of a growing elderly population (Shin, 2011). The aging trend in South Korea has sharply risen from 7.3% in 2007 to 14.3% in 2018, with an aging index reaching 107.3 in 2017, surpassing the youth population (Choi, 2020). To ensure a high quality of life for the rapidly increasing elderly population, maintaining health is crucial, and oral health management is essential for overall well-being (Shin, 2011).

Oral health contributes holistically to individual well-being and is a crucial element for maintaining mental health and overall quality of life (Park, 2013). It plays an essential role in contributing to the overall quality of life related to health and is a key factor for maintaining a healthy life in old age (Kim, 2014). Despite being an essential aspect of a healthy life, factors contributing to the occurrence of unmet dental care needs include the inequity issue arising from the many non-insured dental treatment items, socio-economic problems, and physical environmental issues (Lee, 2015). The utilization rate of dental care has been rapidly increasing over the years, causing anticipated financial burdens on the National Health Insurance Corporation's finances (Ryu, 2019). Disparities in dental treatment between income levels persist, with the implant coverage rate for the top 10% of the income bracket being 4.5%, while for medical aid beneficiaries, it is only 1.8% (Choi, 2017). Despite the increase in dental care utilization, the inequality in dental treatment across income levels continues.

In 2000, 63.06% of Koreans used dental care facilities (Lee, 2001). However, in 2012, the dental treatment experience rate in the past year was 72.1%, and the unmet treatment need rate, where individuals perceived the need for dental treatment but did not receive it, was 28.0% (Song, 2013). Despite the increased awareness and practice of dental care compared to the past, unmet dental care needs still occurs.

According to the research by Lee et al., among respondents who reported discomfort during dental treatment, 64.5% belonged to the lowest income group ('low' monthly household income). Among those with speech problems, 61.8% in the 'low' monthly household income group were unmet dental care needs recipients. The main reasons for not receiving dental treatment in the past year, reported by 1,036 individuals, were the inability to take time off work or school, economic reasons (1,028 individuals), and distance-related issues (57 individuals) (Lee, 2015). These factors not only affect individuals with poor oral health but also suggest a likely impact on speech and chewing problems.

Speech problems due to poor oral health can lead to pronunciation difficulties, affecting social life aesthetically and potentially causing isolation (Kim, 2014). Similarly, as chewing problems decrease functionality, the quality of life related to health, such as smoking status and stress, tends to decrease (Park, 2020).

The ultimate goal of healthcare is to increase accessibility, improve quality, reduce medical expenses, and enhance the quality of life through efficient and equitable services. Thus, this study aims to explore the relationship between speech and chewing problems caused by poor oral health and the status of unmet dental care needs among recipients and non-recipients of dental care, using raw

data from the 7th Korea National Health and Nutrition Examination Survey (2016-2018). The goal is to identify possible avenues for reducing the rate of unmet dental care needs among the population.

2. Materials and Methods

2.1 Data source

This study utilized the raw data from the 7th Korea National Health and Nutrition Examination Survey (2016-2018) to investigate the correlation between poor oral health, specifically speech and chewing problems, and the status of untreated dental care. The Korea National Health and Nutrition Examination Survey is conducted to assess the overall health status of the nation, playing a crucial role in guiding the direction of health policies. Currently, this survey is widely used for the development and improvement of health policies, international comparisons of health levels among various countries, and diverse research on health promotion and disease prevention.

The survey's participants were selected using a systematic sampling method within 192 sample survey areas, excluding facilities such as nursing homes, military establishments, prisons, and foreign households. Starting from the 1st year of the 7th survey (2016), 23 sample households were selected through a systematic sampling method within each sample survey area (Ministry of Health and Welfare, 2018). Within the sample households, all family members aged 1 year and above who met the criteria for household members were selected as survey participants (Ministry of Health and Welfare, 2018).

For this study, data from 13,998 adults aged 19 and above were used, excluding individuals without information on general characteristics such as region, gender, age, income level, education level, subjective health status, alcohol consumption experience, smoking status, and the number of days walked per week. Individuals under the age of 19 were excluded, considering this period as a crucial time for forming behaviors and attitudes related to health (Ma, 2016).

2.2 Independent variables

2.2.1 Chewing problems due to poor oral health

Chewing problems resulting from poor oral health were assessed among recipients and non-recipients of dental care using a questionnaire that asked, "Do you currently experience discomfort while chewing food due to issues with your teeth, dentures, gums, or other problems in your mouth?" Participants could respond with "Very uncomfortable", "Uncomfortable", "Just so-so", "Not uncomfortable", or "Not uncomfortable at all".

2.2.2 Speech problems due to poor oral health

Speech problems resulting from poor oral health were evaluated among recipients and non-recipients

of dental care using a questionnaire that asked, “Do you currently experience difficulty or discomfort in articulating clearly due to issues with your teeth, dentures, gums, or other problems in your mouth?” Participants could respond with “Very uncomfortable”, “Uncomfortable”, “Just so-so”, “Not uncomfortable”, or “Not uncomfortable at all”.

2.3 Dependent variables

2.3.1 Unmet dental care needs

The dependent variable in this study is the status of unmet dental care needs. Participants’ status regarding unmet dental care needs was classified based on the questionnaire asking, “In the past year, have you ever needed dental treatment (examination or treatment) but did not receive it?”.

2.4 Control variables

Based on the analysis of the 5th Korea National Health and Nutrition Examination Survey data in previous research (Choi & Yun, 2014), variables such as region, age, income level, and education level were selected for this study. Regions were classified as Seoul, metropolitan cities, and other regions. Age groups were categorized as ‘29 years and below’, ‘30s’, ‘40s’, ‘50s’, ‘60s’, and ‘70 years and above’. Income levels were divided into ‘low’, ‘lower-middle’, ‘upper-middle’, and ‘high’. Marital status was classified as married or unmarried. Alcohol consumption was categorized as non-drinker or drinker. Smoking status was classified as current smoker, former smoker, or non-smoker. The frequency of walking per week was divided into ‘not at all’, ‘1-2 days’, ‘3-4 days’, ‘5-6 days’, and ‘every day’.

2.5 Analytical approach and statistics

To analyze the correlation between chewing and speech problems due to poor oral health and the status of untreated dental care, chi-square (X2) tests and logistic regression analysis were conducted. Data organization and statistical analysis were performed using SAS ver. 9.4 (SAS Institute Inc., Cary, NC, USA), and the significance level (α) for all analyses was set at less than 0.05.

3. Results

3.1 Unmet dental care status in the past year according to general characteristics

Table 1 presents the results depicting the recent one-year unmet dental care status based on the general characteristics of the study participants included in the analysis.

The final number of participants was 13,998, with 4,559 individuals (31.7%) reporting untreated dental care in the past year. Among those who responded that they experienced ‘extreme discomfort’

in chewing (797 individuals), 62.6% (500 individuals) had experienced untreated dental care in the past year, while among those who responded 'not uncomfortable at all', 18.5% (835 individuals) had experienced untreated dental care in the past year (P-value: <.0001).

Similarly, among those who responded 'extremely uncomfortable' in speech problems (148 individuals), 58.5% (148 individuals) responded affirmatively to untreated dental care in the past year, while among those who responded 'not uncomfortable at all', 27.2% (2,387 individuals) had experienced untreated dental care in the past year (P-value: <.0001).

Furthermore, concerning the recent one-year unmet dental care status according to age, in the 19-29 age group, 25.1% (415 individuals) reported experiencing untreated dental care in the past year, whereas in the 70 and above age group, it was 34.4% (813 individuals) (P-value: <.0001).

Table 1. General characteristics of the study subjects

	Dental unmet need within 1 year						
	Total		Yes		No		
	N	%*	N	%*	N	%*	P-value
Total	13,998	100.0	4,559	31.7	9,439	68.3	
Chewing problems							<.0001
Very uncomfortable	797	4.3	500	62.6	297	37.4	
Uncomfortable	2,850	18.2	1,388	49.8	1,462	50.2	
Just so	2,479	17.3	936	38.3	1,543	61.7	
Not uncomfortable	3,357	24.4	900	27.2	2,457	72.8	
Not at all uncomfortable	4,515	35.7	835	18.5	3,680	81.5	
Speaking problems							<.0001
Very uncomfortable	258	1.4	148	58.5	110	41.5	
Uncomfortable	1,057	6.2	487	43.6	570	56.4	
Just so	1,456	9.3	583	41.5	873	58.5	
Not uncomfortable	2,657	18.5	954	36.3	1,703	63.7	
Not at all uncomfortable	8,570	64.6	2,387	27.2	6,183	72.8	
Experience of tooth damage							0.840
No	12,226	86.5	3,966	31.6	8,260	68.4	
Yes	1,772	13.5	593	31.9	1,179	68.1	
Region						100.0	0.060
Seoul	2,690	19.4	814	29.9	1,876	70.1	
Metropolitan city	3,667	27.8	1,157	30.6	2,510	69.4	
Rural area	7,641	52.8	2,588	32.9	5,053	67.1	
Sex							<.0001
Male	5,996	48.6	1,759	29.2	4,237	70.8	
Female	8,002	51.4	2,800	34.0	5,202	66.0	
Age							<.0001
19-29	1,559	16.8	415	25.1	1,144	74.9	
30-39	2,089	17.1	705	33.8	1,384	66.2	
40-49	2,624	20.8	863	32.8	1,761	67.2	
50-59	2,812	21.2	911	31.8	1,901	68.2	
60-69	2,523	13.4	852	33.1	1,671	66.9	
Over 70	2,391	10.7	813	34.4	1,578	65.6	

	Dental unmet need within 1 year						
	Total		Yes		No		
	N	%*	N	%*	N	%*	P-value
Income							<.0001
Low	2,695	15.8	1,056	38.5	1,639	61.5	
Middle-low	3,346	23.2	1,265	37.9	2,081	62.1	
Middle-high	3,791	29.0	1,224	32.2	2,567	67.8	
High	4,166	32.0	1,014	23.3	3,152	76.7	
Educational level							<.0001
Under elementary school	2,855	14.4	1,144	40.5	1,711	59.5	
Middle school	1,443	8.9	543	36.3	900	63.7	
High school	4,470	35.0	1,440	31.9	3,030	68.1	
Over college	5,230	41.7	1,432	27.4	3,798	72.6	
Marital status							<.0001
Married	11,803	78.0	3,908	32.6	7,895	67.4	
Single	2,195	22.0	651	28.2	1,544	71.8	
Self-rated health							<.0001
Very	3,850	29.1	946	24.0	2,904	76.0	
Less	7,258	52.3	2,334	31.5	4,924	68.5	
Low	2,890	18.6	1,279	44.1	1,611	55.9	
Alcohol status							0.300
Never	1,576	9.0	536	33.0	1,040	67.0	
Ever	12,422	91.0	4,023	31.5	8,399	68.5	
Smoking status							<.0001
Current smoker	2,493	21.3	959	37.4	1,534	62.6	
Former smoker	3,021	21.6	839	27.3	2,182	72.7	
Non-smoker	8,484	57.1	2,761	31.2	5,723	68.8	
Days of walking (within 7 days)							<.0001
Never	2,705	17.7	1,071	39.5	1,634	60.5	
1-2	2,332	16.7	786	33.5	1,546	66.5	
3-4	2,747	19.7	842	30.0	1,905	70.0	
5-6	2,336	17.6	724	30.1	1,612	69.9	
Everyday	3,878	28.3	1,136	27.9	2,742	72.1	

%*: Weighted %

3.2 Analysis of the relationship between speech and chewing problems and unmet dental care needs

Table 2 showed analysis of the relationship between speech and chewing problems and unmet dental care needs. Regarding speech problems, the unmet dental care rate was 2.819 times higher for those who reported extreme discomfort compared to those who reported no issues (OR: 2.819, 95% CI: 2.088-3.806, P-value: <.0001). Additionally, those who reported discomfort had a 1.715 times higher unmet dental care rate (OR: 1.715, 95% CI: 1.449-2.029, P-value: <.0001), and those who responded with ‘just so-so’ had a 1.648 times higher unmet dental care rate (OR: 1.648, 95% CI: 1.426-1.905, P-value: <.0001) compared to those with no issues.

Similarly, regarding chewing problems, the unmet dental care rate was 7.507 times higher for

those who reported extreme discomfort compared to those with no issues (OR: 7.507, 95% CI: 6.074-9.278, P-value: <.0001). Those who reported discomfort had a 4.414 times higher unmet dental care rate (OR: 4.414, 95% CI: 3.877-5.025, P-value: <.0001), and those who responded with 'just so-so' had a 2.721 times higher unmet dental care rate (OR: 2.721, 95% CI: 2.378-3.113, P-value: <.0001) compared to those with no issues.

Table 2. Analysis of the relationship between speech and chewing problems and unmet dental care needs

	Dental unmet need within 1 year							
	OR	95%CI		P-value	OR	95%CI		P-value
Chewing problems								
Very uncomfortable	2.819	2.088	3.806	<.0001				
Uncomfortable	1.715	1.449	2.029	<.0001				
Just so	1.648	1.426	1.905	<.0001				
Not uncomfortable	1.455	1.31	1.615	<.0001				
Not at all uncomfortable	1.000							
Speaking problems								
Very uncomfortable					7.507	6.074	9.278	<.0001
Uncomfortable					4.414	3.877	5.025	<.0001
Just so					2.721	2.378	3.113	<.0001
Not uncomfortable					1.638	1.449	1.853	<.0001
Not at all uncomfortable					1.000			
Experience of tooth damage								
No	0.989	0.87	1.125	0.869	1.030	0.905	1.174	0.652
Yes	1.000				1.000			
Region								
Seoul	1.039	0.921	1.172	0.533	1.066	0.943	1.205	0.306
Metropolitan city	0.935	0.835	1.047	0.245	0.938	0.837	1.051	0.267
Rural area	1.000				1.000			
Sex								
Male	0.731	0.652	0.82	<.0001	0.740	0.656	0.834	<.0001
Female	1.000				1.000			
Age								
19-29	1.262	0.973	1.638	0.079	1.793	1.367	2.352	<.0001
30-39	1.887	1.551	2.296	<.0001	2.478	2.030	3.025	<.0001
40-49	1.731	1.437	2.085	<.0001	2.132	1.754	2.592	<.0001
50-59	1.471	1.242	1.742	<.0001	1.586	1.332	1.889	<.0001
60-69	1.218	1.048	1.415	0.010	1.271	1.088	1.485	0.003
Over 70	1.000				1.000			
Income								
Low	1.623	1.389	1.895	<.0001	1.545	1.318	1.810	<.0001
Middle-low	1.769	1.56	2.006	<.0001	1.727	1.519	1.963	<.0001
Middle-high	1.442	1.281	1.624	<.0001	1.446	1.279	1.635	<.0001
High	1.000				1.000			
Educational level								
Under elementary school	1.353	1.152	1.588	0.000	1.199	1.014	1.419	0.034
Middle school	1.208	0.999	1.462	0.052	1.105	0.905	1.350	0.327
High school	1.115	1.006	1.236	0.039	1.070	0.960	1.192	0.220
Over college	1.000				1.000			

	Dental unmet need within 1 year							
	OR	95%CI		P-value	OR	95%CI		P-value
Marital status								
Married	0.994	0.839	1.177	0.945	1.003	0.842	1.195	0.976
Single	1.000				1.000			
Self-rated health								
Very	0.538	0.47	0.616	<.0001	0.635	0.551	0.732	<.0001
Less	0.676	0.601	0.759	<.0001	0.738	0.653	0.834	<.0001
Low	1.000				1.000			
Alcohol status								
Never	0.905	0.78	1.051	0.191	0.894	0.763	1.048	0.168
Ever	1.000				1.000			
Smoking status								
Current smoker	1.443	1.255	1.659	<.0001	1.287	1.116	1.485	0.001
Former smoker	0.994	0.863	1.144	0.9289	0.930	0.804	1.076	0.330
Non-smoker	1.000				1.000			
Days of walking (within 7 days)								
Never	1.367	1.191	1.569	<.0001	1.308	1.137	1.505	0.000
1-2	1.184	1.039	1.35	0.0113	1.122	0.980	1.285	0.096
3-4	1.058	0.921	1.216	0.4264	1.065	0.924	1.227	0.382
5-6	1.086	0.951	1.241	0.2238	1.059	0.925	1.214	0.404
Everyday	1.000				1.000			

3.3 Relationship analysis between speech and chewing problems and unmet dental care needs based on age criteria

Table 3 presents the analysis of the relationship between speech and chewing problems and unmet dental care needs for individuals under 70 and those aged 70 and above. The analysis results for individuals under 70 show that compared to those with no speech problems, the unmet dental care rate was 2.477 times higher for those reporting extreme discomfort (OR: 2.477, 95% CI: 1.598-3.840, P-value: <.0001), and those reporting discomfort had a 1.600 times higher unmet dental care rate (OR: 1.600, 95% CI: 1.305-1.962, P-value: <.0001). Additionally, those responding with ‘just so-so’ had a 1.613 times higher unmet dental care rate (OR: 1.613, 95% CI: 1.372-1.897, P-value: <.0001).

Similarly, for individuals aged 70 and above, compared to those with no speech problems, the unmet dental care rate was 3.688 times higher for those reporting extreme discomfort (OR: 3.688, 95% CI: 2.444-5.564, P-value: <.0001), and those reporting discomfort had a 2.339 times higher unmet dental care rate (OR: 2.339, 95% CI: 1.727-3.167, P-value: <.0001). Additionally, those responding with ‘just so-so’ had a 1.893 times higher unmet dental care rate (OR: 1.893, 95% CI: 1.392-2.575, P-value: <.0001).

Regarding chewing problems, for individuals under 70, compared to those with no issues, the unmet dental care rate was 7.384 times higher for those reporting extreme discomfort (OR: 7.384, 95% CI: 5.596-9.742, P-value: <.0001), and those reporting discomfort had a 4.418 times higher unmet dental care rate (OR: 4.418, 95% CI: 3.832-5.093, P-value: <.0001). Additionally, those

responding with 'just so-so' had a 2.711 times higher unmet dental care rate (OR: 2.711, 95% CI: 2.351-3.126, P-value: <.0001).

For individuals aged 70 and above, compared to those with no issues, the unmet dental care rate was 7.718 times higher for those reporting extreme discomfort (OR: 7.718, 95% CI: 5.171-11.520, P-value: <.0001), and those reporting discomfort had a 4.374 times higher unmet dental care rate (OR: 4.374, 95% CI: 3.031-6.313, P-value: <.0001). Additionally, those responding with 'just so-so' had a 2.739 times higher unmet dental care rate (OR: 2.739, 95% CI: 1.770-4.239, P-value: <.0001).

Table 3. Relationship analysis between speech and chewing problems and unmet dental care needs based on age criteria

	Dental unmet need within 1 year							
Under 69 years	OR	95%CI		P-value	OR	95%CI		P-value
Speaking problems								
Very uncomfortable	2.477	1.598	3.840	<.0001				
Uncomfortable	1.600	1.305	1.962	<.0001				
Just so	1.613	1.372	1.897	<.0001				
Not uncomfortable	1.458	1.304	1.630	<.0001				
Not at all uncomfortable	1.000							
Chewing problems								
Very uncomfortable					7.384	5.596	9.742	<.0001
Uncomfortable					4.418	3.832	5.093	<.0001
Just so					2.711	2.351	3.126	<.0001
Not uncomfortable					1.646	1.448	1.870	<.0001
Not at all uncomfortable					1.000			
Experience of tooth damage								
No	1.021	0.890	1.172	0.761	1.064	0.926	1.223	0.381
Yes	1.000				1.000			
Over 70 years								
Speaking problems								
Very uncomfortable	3.688	2.444	5.564	<.0001				
Uncomfortable	2.339	1.727	3.167	<.0001				
Just so	1.893	1.392	2.575	<.0001				
Not uncomfortable	1.481	1.079	2.033	0.015				
Not at all uncomfortable	1.000							
Chewing problems								
Very uncomfortable					7.718	5.171	11.520	<.0001
Uncomfortable					4.374	3.031	6.313	<.0001
Just so					2.739	1.770	4.239	<.0001
Not uncomfortable					1.528	0.961	2.429	0.073
Not at all uncomfortable					1.000			

4. Discussion

This study aimed to investigate the relationship between oral health, particularly speech and chewing problems, and unmet dental care needs using the raw data from the 7th Korea National Health and Nutrition Examination Survey (2016-2018). The goal was to identify ways to improve the unmet dental care rate among the public concerning oral health, an area still lacking sufficient social attention. The study results revealed that, firstly, the unmet dental care rate was higher among those who reported discomfort in speech compared to those with no speech problems, indicating an increasing unmet dental care rate as the severity of speech issues related to oral health increased. Secondly, individuals reporting discomfort in chewing had a higher unmet dental care rate compared to those with no chewing problems, suggesting an increasing unmet dental care rate with the severity of chewing issues. These findings were statistically significant, demonstrating that higher severity levels of speech and chewing problems were associated with a higher unmet dental care rate.

According to a study on the unmet dental care status and related factors in Korean adults, out of the total respondents who reported discomfort during speaking, 61.8% were identified as unmet dental care cases, and among those reporting difficulty in pronunciation, 57.0% were unmet dental care cases (Lee & Jin, 2015). Additionally, research on factors related to unmet dental care in the elderly found that individuals experiencing discomfort in chewing were 2.14 times more likely to avoid dental care than those without discomfort, and individuals with tooth decay were 1.93 times more likely to forego dental treatment (Chae, 2014). Moreover, those who acknowledged discomfort in speaking had a 1.611 times higher likelihood of unmet dental care needs than those who did not report discomfort (Choi & Yun, 2014). Consistent with previous research, the current study also confirmed that individuals reporting discomfort in speaking or chewing were more likely to experience unmet dental care.

In a study on factors related to unmet dental care in the elderly based on the 2010 Korea National Health and Nutrition Examination Survey, it was found that the unmet dental care rate for individuals aged 65 and above was 27.0% for dental clinics and 21.5% for hospitals. Among those aged 70 and above, the unmet dental care rate was reported as high as 71% (Chae, 2014). Economic activity, income levels, and accessibility issues influenced the unmet dental care rate in the elderly, exacerbating their difficulties in receiving continuous treatment (Jin, 2015). The low coverage of dental diseases by national health insurance, coupled with the financial burden of non-insured dental items, contributed to higher unmet dental care rates compared to other health issues. Additionally, as age increased, despite the higher utilization of oral functions like eating, deteriorating oral health led to a stronger perception of the need for dental treatment. However, economic challenges and the absence of consistent treatment options resulted in higher unmet dental care rates, especially in comparison to other age groups (Kim & Bae, 2019).

Given the higher unmet dental care rates and the relatively greater severity of discomfort perceived by the elderly, it is suggested that their quality of life may be significantly lower. Despite the expansion of dental treatment coverage by the National Health Insurance since 2008, improvements in accessibility to dental care services are still necessary (Kim et al., 2020). Therefore, the study proposes that in addition to education to raise awareness about the importance of oral health in

the elderly, concrete health education and local health programs, as defined by local health laws, should be implemented to address the needs of elderly oral health management (Nam, 2006).

Limitations of this study include its cross-sectional nature, making causality unclear, and the inability to control for all variables of participants in the survey, as subjective judgments of individuals may introduce errors. Nevertheless, the study utilized national data from 2016 to 2018, providing results that can be generalized to the Korean population. By incorporating a large sample size, the study secured the representativeness of the sample. Furthermore, while previous research mainly focused on the relationship between unmet dental care needs and general characteristics, this study delved into more specific issues (speech and chewing problems) and their correlation with unmet dental care needs, providing foundational data to identify causes and develop policies to improve the unmet care rate. Since research on unmet dental care needs is still limited, future studies should address the limitations of this study.

Current oral health policies target low-income elderly individuals, providing measures such as fluoridation and scaling. However, the need for dental care services accessible to all remains insufficient. While there has been considerable progress in healthcare policy, complete accessibility to dental services is still lacking (Ministry of Health and Welfare, 2018). Considering these challenges, it is crucial to devise policies that facilitate easy access to dental services for individuals facing difficulties in information gathering and accessibility.

5. Conclusion

This study examined the relationship between speech problems, chewing problems, and the unmet need for dental care among a total of 13,998 adults using data collected from the 7th Korea National Health and Nutrition Examination Survey (2016-2018).

The analysis revealed that individuals with speech and chewing problems had a higher rate of unmet dental care compared to those without such problems. Furthermore, as the severity of speech and chewing problems increased, the unmet care rate also increased. Individuals who reported not using dental services in the past year showed a higher unmet dental care rate with increased severity of speech and chewing problems. Through these results, it is anticipated that speech and chewing problems can impact the unmet need for dental care, and addressing these issues may lead to a decrease in the unmet dental care rate. Stratified analysis based on age showed that individuals aged 70 and above had a higher unmet dental care rate with increased severity of speech and chewing problems.

This suggests that issues related to the financial burden of dental care and accessibility to dental services may become more pronounced with age. In summary, the unmet dental care rate was relatively high, reaching 62.6% for severe chewing problems and 58.5% for severe speech problems. This pattern indicates that the severity of speech and chewing problems is closely associated with the unmet need for dental care. Therefore, to identify the causes of unmet needs and improve the unmet care rate, more equitable policy measures are needed.

Conflicts of Interest

The authors declare no conflict of interest.

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