



Original Article

The relationship between oral health and dental care usage behavior and health-related quality of life (EQ-5D) in women who have experienced pregnancy and childbirth

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ABSTRACT

Objectives: This study analyzed raw data from the 8th National Health and Nutrition Examination Survey (2019-2021) to assess the impact of oral health problems and dental care usage patterns of women who have experienced pregnancy and childbirth. **Methods:** Out of the 2,389 participants with pregnancy and childbirth experience, 1,301 were included in the final analysis. Multiple regression analysis was conducted using to determine the influencing factors on EQ-5D. **Results:** Factors influencing EQ-5D include general characteristics (age, family income (5 quintile), status of basic living subsistence, education level), oral health problems (chewing problems, complaints of chewing discomfort, speaking problems) ($p < 0.001$). **Conclusions:** The oral health problems and dental care usage patterns of women who experience pregnancy and childbirth have a significant impact on their health-related quality of life. This study provides basic data for women's ongoing oral care.

Key Words: Dental care, Oral health, Parturition, Pregnancy, Quality of life

Introduction

Oral health is closely linked to systemic health [1], and oral diseases such as periodontitis have been reported to be associated with various systemic conditions, including preterm birth, low birth weight, cardiovascular disease, diabetes, and stroke [2-5]. To prevent these oral diseases from occurring, regular dental check-ups are essential for early detection [6]. Oral health is important in all aspects of physiological, psychological, social, and overall health; therefore, it can have a direct impact on quality of life [7]. Women have higher rates of tooth loss and edentulism compared to men, especially due to pregnancy and childbirth [8]. In addition, pregnancy can negatively impact oral health, including poor nutrition due to morning sickness, difficulty maintaining oral hygiene, and changes in eating habits that can increase the likelihood of tooth caries. This causes not only aesthetic problems but also leads to decreased self-confidence and difficulties with daily living and social interactions.

Previous studies on pregnancy and childbirth [9] have shown that pregnancy can cause hormonal changes that lead to gingival bleeding and pregnancy gingivitis, including swelling. They also report that pregnant women are at increased risk of developing gingivitis and periodontitis than women of childbearing age, characterized by a more rapid progression of inflammation. Women with pregnancy and childbirth experience are at greater risk for carious teeth, missing teeth due to dental caries, and periodontal disease than women with no such experience [10]. Meanwhile, Scheutz et al. [11] found that women who had more than four to five children had poorer periodontal status than those who had fewer children. Gonzalez-Jaranay et al. [12] conducted a cohort

study of pregnant women and observed that periodontal status worsened during pregnancy but improved after delivery. Keirse and Plutzer [13] noted that among the pregnant women included in their study, only 35% had a dental check-up during pregnancy, 35% had not had a dental check-up in at least two years, and 38% of those with gingival bleeding during pregnancy had a dental check-up. Therefore, focusing on oral hygiene is important for pregnant women who are vulnerable to oral health care.

A study by Kim and Lee [14] on quality of life found that oral health behaviors and menopause were factors that significantly influence women's health-related quality of life. Meanwhile, Park et al. [15] suggested that periodontal disease in pregnant women causes a decline in health-related quality of life and that intervention programs to manage periodontal disease are needed to improve health-related quality of life. Therefore, continued oral health care is needed to improve oral health and quality of life in women. The oral health program throughout the lifecycle announced by the Ministry of Health and Welfare [16] targets pregnant women, infants, children, adolescents, and the elderly. However, current maternal and child oral health programs mainly focus on oral care education for pregnant women and children who are yet to be born, resulting in a lack of ongoing care for maternal oral health. In addition, previous studies on pregnant women mostly investigated oral diseases, overlooking research on dental care usage behavior and health-related quality of life. Pregnancy and childbirth are the most significant experiences in a woman's life cycle; thus, identifying the factors that influence women's health-related quality of life during this time is crucial. This study aimed to determine how the association between oral health problems and dental care usage behaviors affect health-related quality of life (EQ-5D) in women with pregnancy and childbirth experiences. The findings suggest that policymakers should consider programs to educate women about the importance of oral health care during pregnancy and childbirth and overall health care or quality of life.

Methods

1. Study subjects

This descriptive survey study used raw data from the 8th Korea National Health and Nutrition Examination Survey (KNHANES) conducted from 2019 to 2021 to identify the influencing factors of health-related quality of life among women with pregnancy and childbirth experience (Approval No. 117002 2018-01-03-5C-A). The data were collected without a research ethics review, as it constitutes research conducted directly by the government for public welfare in accordance with Article 2 (1) of the Bioethics and Safety Act and Article 2 (2) 1 of the Enforcement Rules of the same Act. The KNHANES, which includes health examinations, health surveys, and nutritional surveys, were conducted by trained investigators. For the eighth wave (2019–2021), stratified cluster sampling was applied to 576 sample survey districts for three years, and of these, 25 sample households were selected. Within the sample households, all household members aged 1 year and older who met the eligibility requirements were surveyed. Among the total 7,359 subjects, 2,389 women with pregnancy and childbirth experience were selected, and 1,301 women with no missing values for any variable were included in the final analysis.

2. Measurement tool

For the dependent variable, the EuroQoL-5 Dimension (EQ-5D) index, a standardized tool for measuring health-related quality of life, was used. The five domains consisted of mobility, self-care, usual activities, pain or discomfort, and anxiety or depression, which were reconstructed and scored as 'no problems, some problems, or extreme problems,' with values closer to 1 indicating a higher health-related quality of life.

The independent variables were sociodemographic characteristics, oral health problems, and dental care usage behavior in the past year. Sociodemographic characteristics consisted of age (20–89 years old), area of residence (urban/rural), type of national health insurance (self-employed insurance, employed insurance, medical benefit), Family income (5 quintile), status of basic living subsistence, and education level (elementary school graduate or less, middle school graduate, high school graduate, college graduate

or higher). Oral health problems consisted of self-perceived oral health status, chewing problems, complaints of chewing discomfort, and speech problems. Self-perceived oral health status and chewing problems were categorized as 'excellent', 'good', 'fair', 'poor', or 'very poor', while chewing and speech problems were categorized as 'not at all uncomfortable', 'not uncomfortable', 'somewhat uncomfortable', 'uncomfortable', 'very uncomfortable'. Complaints of chewing discomfort were categorized as 'yes or no'. Dental care usage behaviors in the past year comprised experience of toothache, dental check-up, treatment of periodontal disease, treatment of simple cavity, and treatment of root canal in the past year, which were categorized as 'yes or no'.

3. Data analysis

For all analyses of raw data from the 8th KNHANES, complex sampling analysis is performed by applying stratified variables, cluster variables, and weights. The sociodemographic characteristics, oral health problems, and dental care usage behaviors in the past year were analyzed by frequency analysis and descriptive statistics. In addition, a complex sample t-test and analysis of variance (ANOVA) were performed to identify the relationships of EQ-5D according to sociodemographic characteristics, oral health problems, and dental care usage behavior in the past year, while a linear regression analysis was performed to identify factors that significantly influence subjects' health-related quality of life. The collected data were analyzed using the IBM SPSS program (ver. 25.0; IBM Corp., Armonk, NY, USA), and the significance level (α) in the statistical tests was set to 0.05.

Results

1. Differences in EQ-5D according to sociodemographic characteristics

Differences in EQ-5D according to the sociodemographic characteristics of participants are shown in <Table 1>. EQ-5D by age was highest at 40-49 years old (0.98 points) and lowest at 80-89 years old (0.80 points), showing a statistically significant difference ($p<0.05$). Regarding the area of residence, 'urban' (0.94 points) showed a significantly higher score than 'rural' (0.91 points) ($p<0.05$). With respect to national health insurance type, EQ-5D appeared in the highest-to-lowest order of self-employed insurance (0.92 points), employed insurance (0.95 points), and Medical benefit (0.82 points) ($p<0.05$). Among the quintiles of family income (5 quintile), EQ-5D was lowest in the 'low' income group (0.85 points) ($p<0.05$). Regarding the status of basic living subsistence, those who responded 'Yes' (0.86 points) showed a lower EQ-5D than those who responded 'No' (0.94 points) ($p<0.05$). In terms of education level, EQ-5D was lowest among elementary school graduates or lower groups (0.86 points) and highest among college graduates or higher groups (0.97 points), showing a statistically significant difference ($p<0.05$).

2. Differences in EQ-5D according to oral health problems

Differences in EQ-5D according to oral health problems in participants are shown in <Table 2>. EQ-5D was lowest among those with very poor self-perceived oral health (0.86 points) and highest among those with excellent self-perceived oral health (0.99 points), showing a significant difference ($p<0.05$). Regarding chewing problems, those who answered 'not at all uncomfortable' had the highest score (0.96 points), while those who responded 'very uncomfortable' had the lowest score (0.77 points), showing a significant difference ($p<0.05$). In complaints of chewing discomfort, EQ-5D was significantly lower among those who responded 'Yes' (0.87 points) than those who responded 'No' (0.95 points) ($p<0.05$). Regarding speech problems, EQ-5D was significantly higher in the 'not at all uncomfortable' group (0.95 points) than in the 'very uncomfortable' group (0.77 points) ($p<0.05$).

3. Differences in EQ-5D according to dental care usage behaviors in the past year

Differences in EQ-5D according to dental care usage behaviors in the past year in participants are shown in <Table 3>. Regarding their experience of toothache in the past year, those who responded 'Yes' (0.92 points) showed statistically significantly lower EQ-5D

than those who responded 'No' (0.94 points) ($p<0.05$). Regarding dental check-ups in the past year, those who responded 'Yes' (0.95 points) showed statistically significantly higher EQ-5D than those who responded 'No' (0.91 points) ($p<0.05$). In terms of the treatment of periodontal disease in the past year, those who responded 'Yes' (0.92 points) showed statistically significantly lower EQ-5D than those who responded 'No' (0.94 points) ($p<0.05$). Regarding the treatment of root canals in the past year, those who responded 'Yes' (0.91 points) showed statistically significantly lower EQ-5D than those who responded 'No' (0.94 points) ($p<0.05$).

4. Influencing factors of EQ-5D

Linear regression analysis was performed to determine the influence of sociodemographic characteristics, oral health problems, and dental care usage behaviors in the past year on EQ-5D in participants <Table 4>. The results showed that the regression model had a good fit ($p<0.001$) with an explanatory power of 25.0%.

Among sociodemographic characteristics, age, health insurance type, family income (5 quintile), status of basic living subsistence, and education level were identified to have a significant influence on EQ-5D ($p<0.05$). Thus, EQ-5D was higher among those aged 20–59 years old with employed or self-employed insurance, those not receiving basic living subsistence, those who have low family income (5 quintile), and those who are elementary school graduates or lower.

Among oral health problems, chewing problems, complaints of chewing discomfort, and speech problems were identified to have a significant influence on EQ-5D ($p<0.05$). EQ-5D was higher among those who had no chewing problem and no complaint of chewing discomfort and lower among those who were somewhat uncomfortable when speaking.

Table 1. The difference in EQ-5D based on general characteristics of women with pregnancy and childbirth experiences (N=1,301)

Characteristics	Division	N	Mean	SD	p^*
Age (yr)	20-29	15	0.96	0.05	<0.001
	30-39	152	0.97	0.08	
	40-49	230	0.98	0.05	
	50-59	306	0.96	0.08	
	60-69	332	0.92	0.12	
	70-79	212	0.88	0.14	
	80-89	54	0.80	0.20	
Town	Urban	1,061	0.94	0.10	<0.001
	Rural	240	0.91	0.14	
Type of NHI ^a	Self-employed insurance	391	0.92	0.12	<0.001
	Employed insurance	847	0.95	0.09	
	Medical benefit	63	0.82	0.22	
Family income (5 quintile)	Low	211	0.85	0.18	<0.001
	Medium-low	240	0.93	0.11	
	Middle	258	0.95	0.07	
	Medium-high	303	0.96	0.08	
	High	289	0.97	0.07	
Status of basic living subsistence	Yes	94	0.86	0.19	<0.001
	No	1,207	0.94	0.10	
Education level	Elementary school graduate or less	324	0.86	0.16	<0.001
	Middle school graduate	159	0.94	0.10	
	High school graduate	401	0.96	0.07	
	College graduate or higher	417	0.97	0.07	

*by complex sample ANOVA or t-test

^aNational Health Insurance

Table 2. The EQ-5D difference due to oral health problems (N=1,301)

Variables	Division	N	Mean	SD	<i>p</i> [*]
Self-perceived oral health status	Excellent	8	0.99	0.03	<0.001
	Good	251	0.96	0.08	
	Fair	579	0.95	0.09	
	Poor	426	0.91	0.14	
	Very poor	37	0.86	0.22	
Chewing problems	Not at all uncomfortable	448	0.96	0.07	<0.001
	Not uncomfortable	340	0.95	0.09	
	Somewhat uncomfortable	223	0.94	0.09	
	Uncomfortable	230	0.90	0.14	
	Very uncomfortable	60	0.77	0.23	
Complaints of chewing discomfort	Yes	290	0.87	0.17	<0.001
	No	1,011	0.95	0.08	
Speech problems	Not at all uncomfortable	837	0.95	0.08	<0.001
	Not uncomfortable	253	0.93	0.10	
	Somewhat uncomfortable	119	0.89	0.15	
	Uncomfortable	71	0.84	0.19	
	Very uncomfortable	21	0.77	0.24	

^{*}by complex sample ANOVA or t-test

Table 3. The EQ-5D difference based on patterns of dental care utilization in the past year (N=1,301)

Variables	Division	N	Mean	SD	<i>p</i> [*]
Experience of toothache	Yes	365	0.92	0.13	0.026
	No	936	0.94	0.10	
Dental check-up	Yes	831	0.95	0.09	<0.001
	No	470	0.91	0.14	
Treatment of periodontal disease	Yes	269	0.92	0.13	0.013
	No	1,032	0.94	0.11	
Treatment of simple cavity	Yes	224	0.94	0.09	0.379
	No	1,077	0.93	0.12	
Treatment of root canal	Yes	213	0.91	0.15	<0.001
	No	1,088	0.94	0.10	

^{*}by complex sample ANOVA or t-test

Table 4. The factors affecting EQ-5D in women with pregnancy and childbirth experience (N=1,301)

Variables	Division	B	SE	95% CI		t	<i>p</i> [*]
				Lower	Upper		
Age (yr)	20-29	0.077	0.034	0.010	0.143	2.286	0.024
	30-39	0.069	0.030	0.011	0.128	2.335	0.021
	40-49	0.079	0.029	0.022	0.136	2.739	0.007
	50-59	0.062	0.029	0.004	0.119	2.120	0.036
	60-69	0.051	0.030	-0.008	0.110	1.712	0.089
	70-79	0.048	0.028	-0.007	0.103	1.721	0.087
Town	Urban	0.008	0.007	-0.006	0.022	1.115	0.267
Type of NHI ^a	Self-employed & employed insurance	0.017	0.006	0.005	0.029	2.852	0.005
Family income (5 quintile)	Low	-0.030	0.011	-0.052	-0.008	-2.671	0.008
	Medium-low	-0.002	0.008	-0.017	0.013	-0.267	0.790
	Middle	-0.005	0.007	-0.018	0.009	-0.695	0.488
	Medium-high	-0.002	0.006	-0.015	0.010	-0.343	0.732
Status of basic living subsistence	No	0.041	0.014	0.013	0.070	2.867	0.005
Education level	Elementary school graduate or less	-0.029	0.011	-0.050	-0.008	-2.705	0.008
	Middle school graduate	0.004	0.011	-0.018	0.027	0.377	0.707
	High school graduate	0.011	0.006	-0.001	0.023	1.889	0.061
Self-perceived oral health status	Excellent	0.064	0.034	-0.004	0.131	1.869	0.064
	Good	0.043	0.031	-0.020	0.105	1.353	0.178
	Fair	0.035	0.031	-0.028	0.097	1.097	0.274
	Poor	0.032	0.033	-0.033	0.096	0.977	0.330

Table 4. To be continued

Variables	Division	B	SE	95% CI		t	p*
				Lower	Upper		
Chewing problems	Not at all uncomfortable	0.081	0.027	0.028	0.134	3.023	0.003
	Not uncomfortable	0.020	0.009	0.001	0.038	2.082	0.039
	Somewhat uncomfortable	0.011	0.008	0.005	0.027	1.396	0.165
	Uncomfortable	0.011	0.006	0.002	0.023	1.703	0.091
Complaints of chewing discomfort	No	0.083	0.007	0.069	0.098	11.243	<0.001
Speech problems	Not at all uncomfortable	-0.038	0.060	-0.157	0.081	-0.624	0.534
	Not uncomfortable	-0.039	0.022	-0.082	0.004	-1.800	0.074
	Somewhat uncomfortable	-0.027	0.012	-0.052	-0.003	-2.194	0.030
	Uncomfortable	0.004	0.008	-0.011	0.019	0.515	0.607
Experience of toothache	No	-0.006	0.005	-0.016	0.004	-1.146	0.254
Dental check-up	No	0.001	0.012	-0.023	0.024	0.043	0.966
Treatment of periodontal disease	No	-0.005	0.006	-0.017	0.008	-0.755	0.451
Treatment of simple cavity	No	-0.005	0.006	-0.017	0.007	-0.756	0.451
Treatment of root canal	No	0.009	0.009	-0.008	0.027	1.094	0.276

Wald F=2386.046 ($p<0.001$), $R^2=0.250$

*by complex sample linear regression analysis

ªNational Health Insurance, 95% CI: 95% Confidence interval

Reference: age (80-89), town (rural), type of NHI (medical benefit), family income (high), status of basic living subsistence (yes), educational level (college graduate or higher), self-perceived oral health status (very poor), chewing problems (very uncomfortable), complaints of chewing discomfort (yes), speech problems (very uncomfortable), experience of toothache (yes), dental check-up (yes), treatment of periodontal disease (yes), treatment of simple cavity (yes), treatment of root canal (yes)

Discussion

This study used data from the 8th KNHANES (2019-2021) to identify the influence of oral health problems and dental care usage behaviors on EQ-5D among women with pregnancy and childbirth experience.

First, regarding EQ-5D according to sociodemographic characteristics, all variables showed significant differences between groups. Age, family income (5 quintile), status of basic living subsistence, and education level were identified as influencing factors of EQ-5D. The results showed that the age range of 20-59 years old had a significant influence on EQ-5D, with the highest among women aged 40-49 years old and the lowest among those aged 80-89 years old. Park and Park [17] reported that EQ-5D was higher among those with higher income levels, while Kim and Lim [18] reported that it was lower among those with lower income and education levels and among recipients of basic living subsistence. Kim [19] conducted a study on low-income older female adults and found that low-income older female adults with a lower education level and older age had a lower EQ-5D. The results in these studies were consistent with those in this study. People aged 40-49 years old, on average, are in the most stable period of their lives, as they have jobs, steady income, and a better living environment, enhancing their quality of life by influencing income and education levels. Meanwhile, people aged 80-89 have a lower quality of life as they are no longer economically active.

Regarding EQ-5D according to oral health problems, all variables showed significant differences between groups. Those with better self-perceived oral health and fewer chewing problems, complaints of chewing discomfort, and speech problems showed higher EQ-5D. The influencing factors of EQ-5D were identified to be chewing problems, complaints of chewing discomfort, and speech problems. Kim and Lee [20] reported that people with poorer subjective oral health status and speech discomfort had a higher incidence of periodontal disease. Additionally, Choi et al. [21] confirmed an association between oral health status and EQ-5D and reported that chewing and speech problems were significantly associated with all five components of the EQ-5D. These results were consistent with the findings in this study. Lee [22] reported that the influencing factors of the EQ-5D were gender, age, income level, education level, chewing and speech problems, toothache experience, and subjective oral health status, which was partially consistent with the findings in this study. Moreover, Panchbhai [23] also reported that physical and oral health are factors that affect

quality of life, while poor oral health, chewing and speech problems, and pain can influence quality of life. Based on such findings, it can be interpreted that oral health is associated with overall health and that objective symptoms and subjective perceptions of oral health status have a significant influence on health. Kim and Lim [24] found that objective oral health indicators from experts and subjective oral health status are associated, suggesting that people with better perceived health are more likely to have higher objective oral health indicators. Therefore, oral health care is essential for women with pregnancy and childbirth experiences to live a healthy life. Additionally, managing objective symptoms and perceiving oneself as having good oral health are both important.

Regarding EQ-5D according to dental care usage behaviors in the past year, all variables except treatment of simple cavities showed significant differences between groups. Those who had no toothache experience, no dental check-up, and no treatment of periodontal disease or root canal in the past year had a higher health-related quality of life. Shin and Kim [25], Sung [26], and Son [27] reported that dental care usage is associated with health-related quality of life, which was consistent with the findings in this study. However, not all variables were significant influencing factors in EQ-5D. A systematic review by Rocha et al. [28] found that dental care usage during pregnancy varied from 16 to 83% and suggested that psycho-behavioral factors such as socioeconomic factors, beliefs about oral health and pregnancy, and oral health behaviors play an important role as determinants of dental care. This suggests that various intrinsic factors may influence dental care usage; future studies must compare the health-related quality of life of women who are pregnant and women with pregnancy and childbirth experiences.

This study used only secondary data from KNHANES and did not include women without pregnancy and childbirth experiences or men in the comparisons. Therefore, there are limitations in representing the population. Moreover, menopause is also closely associated with oral health in women due to hormonal changes, poor nutrition, and poor oral hygiene. The average age of menopause is 50; thus, the study population of this study included women who were experiencing menopause. A previous study on postmenopausal women reported that 70% had not had a dental check-up in the past year and that those who did not have a dental check-up were less likely to practice oral health care behaviors than their counterparts [29]. In the future, comparative studies between groups such as women of childbearing age, pregnant women, postpartum women, and postmenopausal women based on the lifecycle of women should be conducted to develop systematic and continuous oral health education programs and alternative approaches to oral health policies.

Nevertheless, the significance of this study is that it confirmed the association between oral health status and dental care usage behaviors of women with pregnancy and childbirth experiences and their health-related quality of life, suggesting the need for continued oral health care throughout the lifecycle of women. Moreover, the findings in this study are expected to be used as basic data for improving oral health programs for women.

Conclusions

The objective of this study was to identify the influence of oral health and dental care usage behaviors on health-related quality of life (EQ-5D) among women with pregnancy and childbirth experiences using data from the 8th KNHANES (2019-2021). Key findings were as follows:

1. Differences in EQ-5D between groups were significant ($p < 0.05$) according to sociodemographic characteristics (age, region of residence, type of health insurance, family income (5 quintile), status of basic living sustenance, and education level), oral health problems (self-perceived oral health status, chewing problems, complaints of chewing difficulty, and speech problems), and dental care usage behaviors in the past year (experience of toothache, dental check-up, treatment of periodontal disease, and treatment of root canal).

2. Influencing factors of EQ-5D were age, family income (5 quintile), status of basic living sustenance, and education level among sociodemographic characteristics; and chewing problems, complaints of chewing discomfort, and speech problems among oral health problems ($p < 0.001$, $R^2 = 0.250$).

The study confirmed that oral health status and dental care usage behaviors have a significant influence on the health-related quality of life of women with pregnancy or childbirth experiences. Future research on oral and systemic health in women with pregnancy or childbirth experiences should include both different populations and hormonal cycles. The findings of this study are expected to be used as basic data for continuous oral care program for women during this vulnerable period of their lives.

Notes

Author Contributions

Conceptualization: JL Son, SA Park; Data collection: JL Son; Formal analysis: JL Son, SA Park; Writing-original draft: JL Son, SA Park; Writing-review and editing: JL Son, SA Park

Conflicts of Interest

The authors declared no conflicts of interest.

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Ethical Statement

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임신과 출산 경험이 있는 여성의 구강건강 및 치과의료 이용 행태와 건강 관련 삶의 질(EQ-5D)과의 관련성

초록

연구목적: 본 연구는 임신 및 출산을 경험한 여성의 구강건강 문제와 치과의료 이용 행태가 건강 관련 삶의 질(EQ-5D)에 미치는 영향을 평가하기 위해 제8차 국민건강영양조사(2019-2021)의 자료를 분석하였다. **연구방법:** 임신 및 출산 경험이 있는 대상자 2,389명 중 1,301명이 최종 분석에 포함되었다. EQ-5D에 대한 영향요인을 파악하기 위해 다중회귀분석을 실시하였다. **연구결과:** EQ-5D에 영향을 미치는 요인으로는 일반적 특성(나이, 가계소득, 기초생활보장, 교육수준), 구강건강 문제(저작 문제, 저작 불편함 호소, 말하기 문제) 등이 있었다($p < 0.001$). **결론:** 임신과 출산을 경험하는 여성의 구강건강 문제와 치과의료 이용 행태는 건강관련 삶의 질에 중요한 영향을 미친다. 본 연구결과는 여성의 지속적인 구강관리에 대한 기초자료로 활용될 수 있다.

색인: 치과의료, 구강건강, 출산, 임신, 삶의 질