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Original Article

Association Between Subjective Xerostomia and Health-Related Quality of Life Among Vulnerable Community-Dwelling Older Adults

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ABSTRACT

Objectives: This study examined the association between subjective xerostomia and health-related quality of life (HRQoL) among vulnerable community-dwelling older adults. **Methods:** A cross-sectional survey was conducted among 1,443 adults aged ≥65 years receiving customized care services in Cheonan, Korea. Subjective xerostomia was assessed using a four-item scale, and HRQoL was measured using the EQ-5D-3L. Data were analyzed using descriptive statistics, Spearman correlation, and multiple linear regression. **Results:** The mean xerostomia score was 6.21±2.24, and the mean EQ-5D index was 0.83±0.15. Xerostomia was negatively correlated with the EQ-5D index ($\rho=-0.342$, $p<0.001$). Greater xerostomia remained associated with lower HRQoL after accounting for age and subjective health status ($B=-0.009$, $\beta=-0.142$, $p<0.001$). **Conclusions:** Subjective xerostomia was independently associated with poorer HRQoL. These findings support the inclusion of xerostomia screening and coordinated oral and general health management in community-based care for vulnerable older adults.

Keywords: Community care, Health-related quality of life, Oral health, Vulnerable older adults, Xerostomia

1. Introduction

As population aging continues to accelerate in Korea, increasing attention has been given to health-related quality of life (HRQoL) as an important indicator of health in later life, encompassing physical, psychological, and social functioning beyond the presence or absence of disease [1]. Oral health plays an important role in food intake, communication, social relationships, and overall health [2]. Because oral diseases disproportionately affect socioeconomically vulnerable populations, oral health should be considered an integral component of health management for vulnerable older adults [2].

In Korea, Customized Care Services for Older Adults provide safety support, opportunities for social participation, health and daily living education, assistance with activities of daily living, and linkage to health and welfare services for vulnerable adults aged 65 years or older who experience difficulties in daily life [3]. Recipients of these services often face multiple vulnerabilities, including chronic diseases, functional limitations, social isolation, and economic hardship, which may also constrain their ability to maintain oral health and access dental care [2,3].

Xerostomia is the subjective sensation of dry mouth and is distinct from objectively measured salivary hypofunction [4]. It is common among older adults [5] and has been

associated with chronic diseases, polypharmacy, dehydration, psychological factors, changes in salivary gland function, and medications with xerogenic effects [4,6,7]. Saliva plays essential roles in lubricating the oral mucosa, facilitating mastication and swallowing, supporting taste and speech, promoting tooth remineralization, and regulating the oral microbiota [8]. Consequently, xerostomia may be associated with oral pain, halitosis, altered taste, difficulties in chewing, swallowing, and speaking, dental caries, oral mucosal damage, and oral candidiasis [4]. These problems may interfere with food intake, sleep, communication, and social participation, potentially compromising quality of life [8]. Moreover, subjective xerostomia has been reported to show a stronger association with oral health-related quality of life than objective measures of salivary hypofunction [9].

Previous studies have predominantly examined xerostomia in relation to oral health-related quality of life, whereas evidence regarding its association with overall HRQoL remains relatively limited [9,10]. Examining generic HRQoL may provide a broader understanding of how xerostomia is associated not only with oral symptoms but also with physical functioning, daily activities, pain or discomfort, and psychological well-being. The EQ-5D is a widely used generic measure of HRQoL that assesses five dimensions: mobility, self-care, usual activities, pain/discomfort, and anxiety/depression [10]. A Korean population-based value set is available for calculating EQ-5D index scores [11].

A previous study of rural residents in Korea reported a significant association between xerostomia and HRQoL [12]. However, that study included general community residents aged 40 years or older and therefore may not adequately represent older adults receiving Customized Care Services, who are likely to have more complex health, functional, and socioeconomic vulnerabilities. Evidence specifically addressing the relationship between xerostomia and overall HRQoL in this vulnerable population remains scarce. Therefore, this study aimed to assess subjective xerostomia and HRQoL among recipients of Customized Care Services for Older Adults in Cheonan, Korea, and to examine the association between xerostomia and HRQoL.

2. Materials and Methods

2.1. Design and ethical considerations

This cross-sectional survey study examined subjective xerostomia and HRQoL among community-dwelling older adults receiving Customized Care Services for Older Adults and investigated the association between subjective xerostomia and HRQoL.

The study was approved by the Institutional Review Board of D University (IRB No. DKU 2026-01-009-002). All participants were informed of the study purpose and procedures, the protection of personal information, the voluntary nature of participation, and their right to withdraw from the study at any time without any disadvantage. Written informed consent was obtained from all participants before data collection.

2.2. Participants

The participants were adults aged 65 years or older who were receiving Customized Care Services for Older Adults in Cheonan, Republic of Korea. Individuals were eligible if they were registered recipients of the service, understood the purpose and content of the study, and voluntarily agreed to participate. Individuals who were unable to complete the questionnaire because of communication difficulties or cognitive impairment and those with incomplete responses for the main study variables were excluded.

A total of 1,443 participants provided informed consent and completed the survey on subjective xerostomia, HRQoL, and general and health-related characteristics. All 1,443 participants had complete data for the main study variables and were included in the final analysis.

2.3. Measures

The survey instrument comprised items assessing general characteristics, health- and oral health-related characteristics, subjective xerostomia, and HRQoL.

2.3.1. Subjective xerostomia

Subjective xerostomia was assessed using an instrument originally developed by Fox et al. [13] and translated into Korean and used in a previous Korean study [14] to evaluate the degree of dry mouth experienced in daily life. The instrument consists of four items, each rated on a 3-point scale: 1 (“not dry at all”), 2 (“occasionally dry”), and 3 (“always dry”). Total scores range from 4 to 12, with higher scores indicating greater severity of subjective xerostomia.

The total score was treated as a continuous variable in the main analyses. For group comparisons, participants were classified into three categories based on the total score: “not dry at all” (4 points), “occasionally dry” (5–8 points), and “always dry” (9–12 points). In the present study, the instrument demonstrated good internal consistency (Cronbach’s α = 0.831).

2.3.2. Health-related quality of life (HRQoL)

HRQoL was assessed using the EQ-5D-3L developed by the EuroQol Group [15]. The EQ-5D-3L comprises five dimensions: mobility, self-care, usual activities, pain/discomfort, and anxiety/depression. Each dimension is assessed at three levels: no problems, some problems, and extreme problems, yielding 243 possible health states.

The EQ-5D index score for each health state was calculated using the Korean population-based valuation model [16]:

EQ-5D index = 1 − (0.0081 + 0.1140×M2 + 0.6274×M3 + 0.0572×SC2 + 0.2073×SC3 + 0.0615×UA2 + 0.2812×UA3 + 0.0581×PD2 + 0.2353×PD3 + 0.0675×AD2 + 0.2351×AD3)

M, SC, UA, PD, and AD represent mobility, self-care, usual activities, pain/discomfort, and anxiety/depression, respectively. The numbers 2 and 3 indicate the severity level within each dimension. Each term was coded as 1 when the corresponding severity level was reported and 0 otherwise. The full health state (11111), indicating no problems in any dimension, was assigned an index value of 1. Higher EQ-5D index scores indicate better HRQoL, whereas negative values represent health states valued as worse than death.

2.3.3. General, health-related, and oral health characteristics

General, health-related, and oral health characteristics were assessed using a structured questionnaire [17,18]. General characteristics included sex, age, economic status, residential area, housing type, educational level, and type of social assistance benefits.

Health-related characteristics included smoking status, self-rated health, and the presence of chronic diseases, such as hypertension and diabetes mellitus. Oral health characteristics included self-rated oral health, receipt of a dental examination within the past year, unmet dental care needs and reasons for unmet needs, denture use, number of implant-supported prosthetic teeth, number of natural teeth, and receipt of oral health education.

2.4. Data collection

Data were collected from March 15 to April 20, 2026, with the cooperation of organizations providing Customized Care Services for Older Adults in Cheonan. Before data collection, the investigators received standardized training on the study purpose, questionnaire, survey procedures, and protection of personal information.

Surveys were conducted face-to-face at participants' homes or service-providing organizations. Trained investigators primarily administered the questionnaire through one-on-one interviews by reading each item aloud and recording the participant's response. Participants who were able to complete the questionnaire independently were permitted to use a self-administered format with investigator assistance as needed. All collected data were de-identified using unique identification numbers and used solely for research purposes.

2.5. Statistical analysis

Data were analyzed using IBM SPSS Statistics for Windows, version 30.0 (IBM Corp., Armonk, NY, USA). Categorical variables were summarized as frequencies and percentages, and subjective xerostomia and HRQoL scores as means and standard deviations. The distributions of continuous variables were assessed using skewness, kurtosis, and normal probability plots.

Differences in subjective xerostomia and HRQoL scores according to participant characteristics were analyzed using independent-samples t-tests or one-way analysis of variance, followed by Scheffé post hoc tests when appropriate. The association between subjective xerostomia and HRQoL scores was examined using Spearman's rank correlation analysis.

Multiple linear regression analysis was performed with HRQoL as the dependent variable and the total subjective xerostomia score as the primary independent variable. Sex, age, educational level, economic status, type of social assistance benefits, smoking status, chronic diseases, self-rated health, self-rated oral health, unmet dental care needs, denture use, and number of natural teeth were included as covariates based on previous studies and theoretical considerations. Categorical variables were dummy-coded. Multicollinearity and regression assumptions, including normality, linearity, homoscedasticity, and independence of residuals, were assessed before analysis. All statistical tests were two-sided, with statistical significance set at $p < 0.05$.

3. Results

3.1. Levels of subjective xerostomia and health-related quality of life

The descriptive statistics for the main study variables are presented in Table 1. The mean subjective xerostomia score was 6.21 ± 2.24. Based on the total score, 33.7% of participants were classified as "not dry at all," 50.4% as

"occasionally dry," and 15.9% as "always dry." Overall, 66.3% of participants experienced some degree of subjective xerostomia.

The mean EQ-5D index score was 0.83 ± 0.15. Among the five EQ-5D dimensions, pain/discomfort had the highest proportion of participants reporting problems (71.6%), followed by mobility (50.0%), anxiety/depression (37.0%), usual activities (36.3%), and self-care (19.5%).

3.2. Subjective xerostomia and health-related quality of life according to general characteristics

Differences in subjective xerostomia and HRQoL according to participants' general characteristics are presented in Table 2. Women had higher subjective xerostomia scores and lower HRQoL scores than men. Significant differences

Table 1. Descriptive statistics of subjective xerostomia and health-related quality of life among vulnerable older adults

Variables	N (%)	Possible range	Min	Max	M ± SD
Subjective xerostomia	1443 (100.0)	4 – 12	4	12	6.21 ± 2.24
Not dry at all	486 (33.7)	4 – 4	4.00	4.00	4.00 ± 0.00
Occasionally dry	728 (50.4)	5 – 8	6.36	6.53	6.44 ± 1.15
Always dry	229 (15.9)	9 – 12	10.04	10.32	10.18 ± 1.08
Health-related quality of life (EQ5D)	1443 (100.0)	0 – 1	0.03	0.99	0.83 ± 0.15
Number of natural teeth	1061 (73.5)	1 – 32	1	31	14.86 ± 10.07
Number of implant teeth	680 (47.1)	1 – 32	1	9	5.07 ± 4.52

Min, minimum; Max, maximum; M ± SD, mean ± standard deviation; EQ-5D-3L, EuroQol five-dimensional three-level questionnaire.

Table 2. Subjective xerostomia and health-related quality of life by general characteristics

Variables	N (%), M ± SD	Subjective xerostomia		HRQoL (EQ-5D)	
		M ± SD	*p*-value	M ± SD	*p*-value
Gender					
Male	260 (18.0)	5.90 ± 2.14	0.006	0.85 ± 0.15	0.014
Female	1183 (82.0)	6.28 ± 2.26		0.83 ± 0.15	
Age					
60s	53 (3.7)	6.34 ± 2.22^{a}	<0.001	0.82 ± 0.18^{ab}	<0.001
70s	605 (41.9)	5.80 ± 2.12^{ab}		0.86 ± 0.14^{b}	
80s	713 (49.4)	6.48 ± 2.24^{b}		0.81 ± 0.15^{ab}	
90s	72 (5.0)	7.22 ± 2.63^{c}		0.77 ± 0.13^{a}	
	80.12 ± 5.95				
Socioeconomic status					
Basic livelihood-security recipient	413 (28.6)	6.41 ± 2.32	0.055	0.82 ± 0.15	0.076
Near-poor	120 (8.3)	6.41 ± 2.18		0.82 ± 0.15	
General population	905 (62.9)	6.10 ± 2.21		0.84 ± 0.15	
Others	2 (0.1)	4.50 ± 0.71		0.85 ± 0.21	
Housing status					
Living alone	1257 (87.1)	6.20 ± 2.23^{ab}	0.045	0.83 ± 0.15	0.283
Couple only	80 (5.5)	5.78 ± 2.13^{a}		0.85 ± 0.14	
Couple with children	17 (1.2)	6.12 ± 2.34^{b}		0.83 ± 0.13	
Others	89 (6.2)	6.74 ± 2.37^{ab}		0.81 ± 0.14	
Level of education					
No formal education	440 (30.5)	6.60 ± 2.35^{a}	<0.001	0.80 ± 0.15^{a}	<0.001
Elementary-education or less	602 (41.7)	6.29 ± 2.21^{a}		0.83 ± 0.14^{b}	
Middle school or higher	401 (27.8)	5.68 ± 2.06^{b}		0.86 ± 0.15^{b}	
Smoking status					
Never smoker	1256 (87.0)	6.21 ± 2.24	0.996	0.83 ± 0.15	0.611
Current smoker	90 (6.2)	6.22 ± 2.29		0.83 ± 0.16	
Former smoker	97 (6.7)	6.20 ± 2.31		0.84 ± 0.14	

M ± SD, mean ± standard deviation; EQ-5D, EuroQol five-dimensional questionnaire; p-values were obtained using independent-samples t-tests or one-way analysis of variance (ANOVA); Different superscript letters indicate significant differences according to Scheffé's post hoc test ($p < 0.05$).

were also observed across age groups, with participants in their 90s showing the highest subjective xerostomia scores and the lowest HRQoL scores. Participants in their 60s had higher subjective xerostomia scores than those in their 70s.

Lower educational levels were associated with higher subjective xerostomia scores and lower HRQoL scores. In particular, participants with no formal education had higher subjective xerostomia scores and lower HRQoL scores than those with a middle school education or higher.

No statistically significant differences were observed according to the type of social assistance benefits or smoking status. Subjective xerostomia scores differed significantly according to housing type; however, Scheffé post hoc tests did not identify significant differences between specific groups.

3.3. Subjective xerostomia and health-related quality of life according to health-and oral health-related characteristics

Differences in subjective xerostomia and HRQoL according to health- and oral health-related characteristics are presented in Table 3. Participants who had received oral health education had lower subjective xerostomia scores than those who had not, whereas no significant difference was observed in HRQoL scores. Denture wearers had higher subjective xerostomia scores and lower HRQoL scores than non-wearers. In contrast, participants with implant-supported prosthetic teeth had lower subjective xerostomia scores and higher HRQoL scores than those without implant-supported prosthetic teeth.

Table 3. Subjective xerostomia and health-related quality of life by health and oral health–related characteristics

Characteristics	N (%), M ± SD	Subjective xerostomia		HRQoL (EQ-5D)	
		M ± SD	*p*-value	M ± SD	*p*-value
Oral health education experience					
No	1037 (74.5)	6.30 ± 2.27	0.005	0.83 ± 0.15	0.218
Yes	355 (25.5)	5.92 ± 2.12		0.84 ± 0.15	
Denture use					
Non-denture wearer	757 (52.5)	5.85 ± 2.09	<0.001	0.84 ± 0.14	<0.001
Denture wearer	686 (47.5)	6.61 ± 2.34		0.82 ± 0.15	
Presence of implant prosthesis					
Absent	756 (52.4)	6.37 ± 2.31	0.005	0.82 ± 0.15	<0.001
Present	687 (47.6)	6.04 ± 2.15		0.84 ± 0.14	
Subjective health status					
Very good	132 (9.1)	5.14 ± 1.89^{a}	<0.001	0.94 ± 0.09^{a}	<0.001
Good	410 (28.4)	5.43 ± 1.81^{a}		0.90 ± 0.10^{b}	
Fair	488 (33.8)	6.20 ± 2.12^{b}		0.83 ± 0.13^{c}	
Poor	316 (21.9)	7.12 ± 2.36^{c}		0.75 ± 0.14^{d}	
Very poor	97 (6.7)	8.05 ± 2.31^{d}		0.64 ± 0.17^{e}	
Subjective oral health status					
Very good	139 (9.6)	5.16 ± 1.89^{a}	<0.001	0.87 ± 0.13^{a}	<0.001
Good	374 (25.9)	5.41 ± 1.84^{a}		0.87 ± 0.13^{a}	
Fair	446 (30.9)	6.11 ± 2.05^{b}		0.84 ± 0.13^{b}	
Poor	321 (22.2)	6.98 ± 2.32^{c}		0.78 ± 0.15^{c}	
Very poor	163 (11.3)	7.72 ± 2.44^{d}		0.76 ± 0.18^{c}	
Oral examination					
Yes	618 (42.8)	6.25 ± 2.18	0.577	0.84 ± 0.15	0.026
No	825 (57.2)	6.18 ± 2.28		0.82 ± 0.15	
Unmet dental care needs					
Yes	216 (15.0)	7.10 ± 2.33^{b}	<0.001	0.77 ± 0.16^{a}	<0.001
No	1161 (80.5)	6.06 ± 2.20^{a}		0.84 ± 0.14^{b}	
No need for dental care	66 (4.6)	6.08 ± 2.09^{a}		0.83 ± 0.14^{b}	
Daily toothbrushing frequency					
Never	31 (2.1)	6.90 ± 2.47^{bc}	<0.001	0.81 ± 0.16^{abc}	<0.001
Once daily	130 (9.0)	6.99 ± 2.43^{c}		0.78 ± 0.17^{a}	
Twice daily	775 (53.7)	6.24 ± 2.23^{ab}		0.83 ± 0.15^{bc}	
≥3 times daily	464 (32.2)	5.93 ± 2.12^{a}		0.85 ± 0.14^{c}	
After each meal	43 (3.0)	6.00 ± 2.30^{a}		0.78 ± 0.16^{ab}	
Use of auxiliary oral hygiene products					
Yes	1055 (73.1)	6.27 ± 2.27	0.128	0.83 ± 0.15	0.798
No	388 (26.9)	6.06 ± 2.16		0.83 ± 0.15	

M ± SD, mean ± standard deviation; EQ-5D, EuroQol five-dimensional questionnaire; p-values were obtained using independent-samples t-tests or one-way analysis of variance (ANOVA); Different superscript letters indicate significant differences according to Scheffé's post hoc test ($p < 0.05$).

Subjective xerostomia and HRQoL scores differed significantly according to self-rated health and self-rated oral health. Participants with poorer self-rated health or oral health generally had higher subjective xerostomia scores and lower HRQoL scores. The mean HRQoL score ranged from 0.94 among participants who rated their health as "very good" to 0.64 among those who rated it as "very poor."

Participants with unmet dental care needs had higher subjective xerostomia scores and lower HRQoL scores than those without unmet needs. Subjective xerostomia scores did not differ significantly according to receipt of an oral examination within the previous year; however, participants who had received an oral examination had higher HRQoL scores.

Significant differences in both subjective xerostomia and HRQoL scores were also observed according to toothbrushing frequency. Participants who brushed their teeth three or more times per day had lower subjective xerostomia scores and higher HRQoL scores than those who brushed once per day.

3.4. Association between subjective xerostomia and health-related quality of life among older adults receiving customized care services for older adults

A significant moderate negative correlation was observed between subjective xerostomia and HRQoL scores (Spearman's r = −0.342, p < 0.001) (Table 4), indicating that greater subjective xerostomia was associated with lower HRQoL.

Table 4. Association between subjective xerostomia and health-related quality of life among vulnerable older adults

Variables	Subjective xerostomia	Health-related quality of life
Subjective xerostomia	1	
Health-related quality of life	-0.342*	1

* p < 0.01 by Spearman's rank correlation.

3.5. Factors associated with health-related quality of life

Factors associated with HRQoL among older adults receiving Customized Care Services for Older Adults are presented in Table 5. The multiple linear regression model was statistically significant (F = 233.883, p < 0.001) and explained 32.8% of the variance in HRQoL scores (adjusted R^2 = 0.326).

Subjective xerostomia, self-rated health, and age were significantly associated with HRQoL. After adjusting for the other variables, each one-point increase in the subjective xerostomia score was associated with a 0.009-point decrease in the HRQoL score (B = −0.009).

Based on the absolute standardized coefficients, self-rated health showed the strongest association with HRQoL (β = 0.480), followed by subjective xerostomia (β = −0.142) and age (β = −0.126). Better self-rated health was associated with higher HRQoL, whereas greater subjective xerostomia and older age were associated with lower HRQoL.

Table 5. Factors associated with health-related quality of life among vulnerable older adults

Variables	B	SE	β	t	*p*-value*
Constant	1.332	0.010		109.654	<0.001
Subjective xerostomia	-0.009	0.002	-0.142	-5.996	<0.001
Subjective health status	0.067	0.003	0.480	20.669	<0.001
Age	-0.003	0.001	-0.126	-5.712	<0.001
F(p) = 233.883 (<0.001), R^2 = 0.328, Adjusted R^2 = 0.326					

Dependent variable: HRQoL (EQ-5D-3L index); p-values were obtained from multiple linear regression analysis (α = 0.05).

4. Discussion

This study examined the association between subjective xerostomia and HRQoL among 1,443 community-dwelling older adults receiving Customized Care Services for Older Adults in Cheonan, Republic of Korea. Overall, 66.4% of participants experienced some degree of subjective xerostomia, and greater subjective xerostomia was associated with lower HRQoL. This association remained statistically significant after adjustment for relevant sociodemographic, health-related, and oral health-related factors.

The mean subjective xerostomia score was 6.21, and 15.9% of participants were classified as having the highest level of xerostomia. Xerostomia is common among older adults [6,14] and has been associated with chronic diseases, polypharmacy, dehydration, psychological factors, and alterations in salivary gland function rather than aging alone [5,7]. Older adults receiving Customized Care Services for Older Adults may have multiple health and functional vulnerabilities [4], which may partly explain the relatively high prevalence of subjective xerostomia observed in this population.

The mean EQ-5D index score was 0.83, with problems most frequently reported in the pain/discomfort and mobility dimensions. Participants in their 90s had the highest xerostomia scores and the lowest HRQoL scores. Women

and participants with lower educational attainment also tended to have higher xerostomia scores and lower HRQoL. These findings highlight the importance of considering both oral health and general health when addressing HRQoL among older adults. Xerostomia-related education should also be delivered using easily understandable language and appropriate educational materials, particularly for older adults with limited health literacy.

Poorer self-rated general and oral health were associated with higher xerostomia scores and lower HRQoL. Xerostomia may be accompanied by oral discomfort, burning sensations, difficulties in chewing, swallowing, and speaking, halitosis, and restricted food intake [5,9]. These problems may adversely affect daily functioning and emotional well-being, providing a possible explanation for the observed association between subjective xerostomia and HRQoL.

Denture wearers had higher xerostomia scores and lower HRQoL than non-wearers. Reduced salivary secretion may compromise denture retention and stability and contribute to oral mucosal discomfort. However, denture use may also reflect tooth loss, advanced age, and poorer general health; therefore, these findings should not be interpreted as evidence of a direct effect of denture use on xerostomia or HRQoL. Similarly, the lower xerostomia scores and higher HRQoL observed among participants with implant-supported prosthetic teeth should be interpreted cautiously, as these associations may reflect differences in access to dental care, socioeconomic circumstances, or general health.

Participants with unmet dental care needs had higher xerostomia scores and lower HRQoL than those without unmet needs. Unmet dental care may contribute to persistent oral symptoms and functional difficulties. Conversely, older adults with poorer health may face greater barriers to accessing dental services because of mobility limitations, financial constraints, or other factors [18]. Given the cross-sectional design of this study, the direction of these associations cannot be determined.

The inverse association between subjective xerostomia and HRQoL is consistent with previous studies reporting associations between xerostomia and oral health-related quality of life among older adults in Japan [9] and between xerostomia and HRQoL among rural residents in South Korea [12]. In the multiple regression analysis, each one-point increase in the subjective xerostomia score was associated with a 0.009-point decrease in the HRQoL score after adjustment for relevant covariates. Although self-rated health showed the strongest association with HRQoL, subjective xerostomia remained independently associated with HRQoL. These findings suggest that screening for subjective xerostomia may be considered as part of routine health assessment for older adults receiving Customized Care Services for Older Adults. Older adults reporting xerostomia may benefit from education on adequate hydration, oral hygiene, oral moisturization, and salivary stimulation, with referral to dental care providers when persistent or severe symptoms are present. Assessment of potential contributing factors, such as medication use, chronic diseases, nutritional status, depressive symptoms, and swallowing difficulties, may also facilitate more comprehensive care [14,17]. Integrating oral healthcare with medical, nutritional, and mental health services may therefore be beneficial for this population [18-20].

This study has several limitations. Its cross-sectional design precludes conclusions regarding temporal or causal relationships between subjective xerostomia and HRQoL. Because participants were older adults receiving Customized Care Services for Older Adults in Cheonan, the findings may not be generalizable to all community-dwelling older adults or to service recipients in other regions. Xerostomia was assessed subjectively without objective measurement of salivary flow. In addition, potentially relevant factors, including medication use, nutritional status, depressive symptoms, swallowing function, and activities of daily living, were not assessed or sufficiently accounted for.

Despite these limitations, this study identified a significant association between subjective xerostomia and general HRQoL in a large sample of community-dwelling older adults receiving Customized Care Services for Older Adults. The findings highlight the potential value of incorporating xerostomia screening into these services and strengthening linkages between oral healthcare and other components of integrated care.

Future longitudinal studies are needed to clarify the temporal relationship between subjective xerostomia and HRQoL and to examine potential underlying mechanisms. Future research should incorporate objective salivary measures and relevant clinical and functional factors, including medication use, nutritional status, depressive symptoms, swallowing function, and activities of daily living. Intervention studies are also warranted to determine whether strategies for managing xerostomia can contribute to improvements in HRQoL among older adults receiving Customized Care Services for Older Adults.

5. Conclusion

This study found that greater subjective xerostomia was associated with lower HRQoL among community-dwelling older adults receiving Customized Care Services for Older

Adults. This association remained significant after adjustment for relevant sociodemographic, health-related, and oral health-related factors. These findings support the potential value of incorporating xerostomia screening into Customized Care Services for Older Adults and strengthening integrated care that links oral healthcare with medical, nutritional, and mental health services.

Author Contribution

Conceptualization: JH Jang; Data collection: GC Shin; Formal analysis: JH Jang; Writing-original draft: MJ Park and JH Jang; Writing-review & editing: MJ Park, GC Shin and JH Jang

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Conflicts of Interest

The authors declare no conflict of interest.

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