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Short Communication

Is Oral Frailty Related To Meal Satisfaction?

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ABSTRACT

Oral frailty causes nutritional imbalance, subsequently leading to malnutrition in older adults. Herein, we examined the relationship between oral frailty and meal satisfaction among community-dwelling older adults.

Meal satisfaction was evaluated using self-administered questionnaires. Oral conditions were assessed based on the number of remaining teeth and oral frailty. Of the 940 subjects in the Kashiwa study, which was conducted in the Kashiwa city, Chiba prefecture, Japan, 71% responded that their meals were "tasty" and 96% responded "enjoyable". Moreover, 23% responded that the amount of meal was "large," and 63% responded "normal". While the number of teeth was not significantly associated with meal satisfaction, there was a negative association between oral frailty and meal satisfaction. Our finding indicates that it is important to consider and manage oral functions, other than the number of remaining teeth, to maintain healthy eating habits in older adults.

Keywords: Oral frailty; Meal satisfaction; Older adults

ABBREVIATIONS:

QOL: Quality of Life; OR: Odds Ratios; CIs: Confidence Intervals

INTRODUCTION

In developed countries with aging populations, specific approaches aimed at maintaining and improving the Quality of Life (QOL) of older adults are required [1]. Eating is one of the major pleasurable activities in the daily lives of older adults, and its importance goes beyond just nutritional purposes. Therefore, increasing their meal satisfaction is important to increase their QOL [2-5]. In fact, according to a survey conducted by the Cabinet Office in Japan, the top situations in which older adults feel their lives are worth living are those related to eating, such as "when eating and chatting with friends and acquaintances" and "when eating delicious meals" [6]. In addition to maintaining and improving the QOL, eating and having a good time can lead to the prevention of frailty, as it provides an opportunity for active communication and outings.

One of the most important factors that. The relationship between oral function and eating habits in older adults is often focused on nutritional status and food intake. There are reports that decreased masticatory and swallowing function in older adults is associated with weight loss, low body weight, and malnutrition [7], and those with low bite force also consume less green and yellow vegetables and seafood, resulting in lower intake of antioxidant vitamins and dietary fiber [8]. However, there are few reports on the association between oral function and meal satisfaction [5].

ORAL FRAILTY

In recent years, it has become clear that the overlapping decline of multifaceted oral functions such as chewing, swallowing, and speaking (and the awareness of its symptoms), so-called "oral frailty", leads to sarcopenia, physical frailty, disability, and mortality in older adults [9], and the impact of the decline of oral functions on the systemic health has been gaining attention.

Oral frailty can be expected to have a negative impact on meal satisfaction due to difficulties in eating, such as difficulty in swallowing and chewing. Therefore, we investigated the relationship between oral frailty and meal satisfaction.

RELATIONSHIP BETWEEN ORAL FRAILTY AND MEAL SATISFACTION

We examined the relationship between oral frailty and meal satisfaction in 940 community-dwelling elderly individuals with no cognitive impairment (mean age 76.3 ± 5.1 years; 53% male) in our study. We evaluated meal satisfaction from three viewpoints (tastiness, enjoyment, and meal quantity) using self-administered questionnaires. Oral conditions were evaluated based on the number of remaining teeth and oral frailty. For the relationship between oral frailty and meal satisfaction, odds ratios (OR) and 95% Confidence Intervals (CIs) were calculated using multinomial logistic regression analysis. The adjusted variables were age, sex,

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body mass index, residential type, depressive symptoms, denture use, and history of chronic disease. The results showed that oral frailty and not the number of remaining teeth were not significantly related to meal satisfaction. Those with oral frailty (8.4%) were significantly less likely than those without oral frailty, to respond that their meals were "tasty" (adjusted OR 0.49, 95% CI 0.29-0.83) and they ate "large" or "normal" (adjusted OR 0.36, 95% CI 0.15-0.84; adjusted OR 0.44, 95% CI 0.22-0.85) meal quantities (Table 1). Our findings suggest that meal satisfaction is associated with not only the number of remaining teeth but also the presence of oral frailty, implying the decline in overall oral function. These results indicate the importance of managing a wide range of multi-faceted oral functions to support healthy eating habits in older adults, and not just the usual approach of dental treatments targeting two major diseases, tooth decay and periodontal disease [10].

FUTURE PROSPECTS

The importance of the prevention of oral frailty is clear from a previous report that oral frailty affects disability and mortality [9]. However, by which we enlighten the importance (such as "being able to eat well and enjoy meals for as long as possible") to the nation from the perspective of QOL improvement, it may be possible to prevent oral frailty at an earlier stage, even for the elderly who are currently healthy [11,12].

CONCLUSION

In conclusion, it is necessary to evaluate meal satisfaction using a wider range of variables, since it can be evaluated from multiple perspectives, including nutritional intake, psychological, social, and cultural aspects, as well as subjective satisfaction with the process

Table 1: Cross-sectional association of meal satisfaction and oral conditions.

		n(%)	Unadjusted OR (95%CI)	p	Adjusted OR[a] (95%CI)	p
Outcome: meal satisfaction						
Meal is "tasty"		668/940 (71%)	-	-	-	-
	Remaining teeth ≥ 20	473/655 (72%)	1	-	1	-
	Remaining teeth <20	195/285 (68%)	0.83 (0.62-1.13)	0.239	0.89 (0.57-1.37)	0.584
	Oral non-frailty	626/861 (73%)	1	-	1	-
	Oral frailty	42/79 (53%)	0.43 (0.27-0.68)	<.001	0.49 (0.29-0.83)	0.008
Meal is "enjoyable"		901/940 (96%)	-	-	-	-
	Remaining teeth ≥ 20	633/655 (97%)	1	-	1	-
	Remaining teeth <20	268/285 (94%)	0.55 (0.29-1.05)	0.069	0.44 (0.15-1.31)	0.14
	Oral non-frailty	829/861 (96%)	1	-	1	-
	Oral frailty	72/79 (91%)	0.40 (0.17-0.93)	0.034	0.75 (0.26-2.17)	0.599
Meal quantity is "large"		216/940 (23%)	-	-	-	-
	Remaining teeth ≥ 20	148/655 (23%)	1	-	1	-
	Remaining teeth <20	68/285 (24%)	0.96 (0.60-1.54)	0.873	0.97 (0.49-1.92)	0.929
	Oral non-frailty	203/861 (24%)	1	-	1	-
	Oral frailty	13/79 (17%)	0.35 (0.17-0.74)	0.005	0.36 (0.15-0.84)	0.018
Meal quantity is "normal"		594/940 (63%)	-	-	-	-
	Remaining teeth ≥ 20	419/655 (64%)	1	-	1	-
	Remaining teeth <20	175/285 (61%)	0.88 (0.58-1.32)	0.521	0.85 (0.47-1.53)	0.575
	Oral non-frailty	548/861 (64%)	1	-	1	-
		46/79 (58%)	0.46 (0.26-0.81)	0.007	0.44 (0.22-0.85)	0.015

a: age, sex, body mass index, residential type, depressive symptoms, denture use, and history of chronic disease (Hypertension, Diabetes mellitus, Osteoporosis, Dyslipidemia, Malignant neoplasm, Heart disease, Apoplexy, chronic renal failure)

of tasting and enjoying meals. For example, The Satisfaction with Food-related Life Scale (SWFL) is a tool used worldwide. The reliability and validity of the 18-item Diet-Related Quality of Life Scale (DRQOL) and its shortened version have also been reported. In the future, such scales should also be used to accumulate evidence regarding the improvement of meal satisfaction through oral frailty prevention, and to clarify more specific intervention points.

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