

A Study of the Factors of Affecting on Patients' Halitosis in Geriatric Hospital

Soo-chul Park¹, Hong-sik Kim¹, Myung-hee Jung²

¹Department of Dental Technology, Gimcheon University

214 Daehakro Gimcheon City, Gyeongbuk 740-704, Republic of Korea

²Department of Dental Hygiene, Songho College, ¹remedios-1@hanmail.net

Abstract. The purpose of this study was to investigate the association of patients' halitosis with their characteristics, using the mean value of three measurements of halitosis in two tests, which was checked by the patients at two Geriatric Hospitals in Daegu using B & B Checker (mBA-21, Plastic, Korea) before lunch. The participants were of mixed gender and mostly over 76-year-old but the females did outnumber the males in this study. The results will demonstrate that the more elderly they were and the lower oral satisfaction they get, the higher the patients' halitosis measurements are. The relation and the number of remaining teeth with halitosis of patients shows significant difference statistically difference ($p < 0.05$).

Keywords: halitosis, geriatric hospital, Oral status

1 Introduction

Due to the increase of the aging population in Korea, the health care services for the aged has provided geriatrics, a recognized nursing class with the knowledge of various age-related diseases with the long-term care insurance system for them through Geriatric Hospital since July 2008. In order to maintain the health of the body and to intake the sufficient amount of food, nutrition is important, but the aged are constantly missing teeth from the accumulated increase of oral diseases such as periodontal disease. Eventually their oral conditions become serious afflictions, compared to that of other normal oral conditions because they need to have prosthetic dental treatments [1], [2]. Yet, the aged patients in the Geriatric Hospital are mostly over 75-year-old, have limited mobility, and have other diseases, as a result, it is difficult to manage their own oral status [3]. Despite there being various medical providers such as; doctor's assistants, nurses, physical therapists and other professional health care assistances in Geriatric Hospital but there is no dental service there. Shin [4] states that most elderly people do not have regular dental check-ups, nor do they care because they feel it is an inconvenience and will not give dentistry a priority even with their oral status deteriorating. It necessary to state that a dentist's diagnosis and a proper screening is the most accurate, but Mcnamara[5] reports halitosis can be a signal of oral disease; 87% of halitosis has an unpleasant

smell, 8% is a due from otolaryngology, and the remaining 5% comes from other parts of the body.

The purpose of this study is to make use of oral health materials and correlating that with the levels of halitosis that have been measured by patients without any dental care services with their characteristics.

2 Research Methods

2.1 Materials and Methods

This research was done at two Geriatric Hospitals located in Daegu in June 2013. There were 103 patients who participated in the research either by themselves or with guardians, which were targeted by the interview and oral examination before lunch using the B & B Checker (mBA-21, Plustech, Korea). This study analyzed the mean value of three measurements halitosis using the statistical program SPSS version 18.0 chi-squared tests, ANOVA analysis (One-way Anova).

3 Results

3.1 General characteristics and levels of halitosis

The majority of the study are females (73.7%) and are between 75 and 84- year-old (40.6%). The highest level of education is elementary school(39.8%). The results of halitosis measurement are 'less than 50 BBV' (39.1%), '71~90 BBV' (31.6%), 'more than 90BBV' (17.3%), '50~70 BBV ' (12.0%) (Table 1).

3.2 The relevance characteristics of the patients in Geriatric Hospitals and halitosis

As to the relevance of ages of the patients in Geriatric Hospitals and halitosis, the lowest is 44.77BBV by 'Less than age 65', of career experience, the lowest is 43.00 BBV by 'Office job' (p<0.05) (Table 2-1). In that satisfaction of oral status, the lowest is 25.50 BBV by 'Very satisfied' (p<0.001). As to the number of left teeth, the lowest is 45.67BBV by 'More than 21' (p<0.001) (Table 2-2).

Table 1. The general characteristics of the patients and the level of halitosis

Characteristics	male	female	X ²	P
-----------------	------	--------	----------------	---

Age(yrs)	≤65	9(25.8)	4(4.1)	31.755	0.000
	66~75	16(45.7)	16(16.3)		
	76~85	6(17.1)	48(49.0)		
	≥86	4(11.4)	30(30.6)		
Education	None	4(11.4)	45(45.9)	60.400	0.000
	Elementary school	7(20.0)	46(47.0)		
	Middle school	8(22.9)	6(6.1)		
	≥High school	16(45.7)	1(1.0)		
Halitosis (BBV)	≤50	18(51.4)	34(34.7)	3.085	0.379
	51~70	3(8.6)	13(13.3)		
	71~90	9(25.7)	33(33.7)		
	≥91	5(14.3)	18(18.4)		
Total	35(100)	98(100)	133	100	

Table 2. The relevance characteristics of the patients and halitosis

Variable	Characteristics	N	Mean	SD	F	p-value
Age(yrs)	≤65	13	44.77 ^a	26.54	3.72	0.013
	66~75	32	55.53 ^{ab}	28.80		
	76~85	54	68.03 ^b	24.27		
	≥ 86	34	66.47 ^b	27.31		
Career experience	Agriculture	23	60.91 ^{ab}	26.42	3.00	0.021
	Business	17	59.41 ^{ab}	27.79		
	Office job	11	43.00 ^a	25.33		
	Inoccupation	53	61.45 ^{ab}	25.29		
	Etc.	29	74.21 ^b	28.42		

TuKey HSD:^{a,b,c}

Within mean±SD values column, values with different letter were significantly different between the groups.

Table 3. The relevance characteristics of the patients and halitosis

Variable	Characteristics	N	Mean	SD	F	p-value
----------	-----------------	---	------	----	---	---------

	Very satisfied	6	25.50 ^a	7.40		
	Satisfied	23	43.52 ^{ab}	21.46		
Oral status satisfaction	Normal	19	60.47 ^{bc}	25.50	9.84	0.000
	Uncomfortable	47	67.13 ^{bc}	25.71		
	Very uncomfortable	38	74.61 ^c	24.81		
Left teeth (number)	0	56	70.89 ^b	25.58	9.14	0.000
	1~10	39	67.46 ^b	28.23		
	11~20	23	45.74 ^a	21.63		
	≥ 21	15	45.67 ^a	18.13		
Total		133	62.35	27.31		

TuKey HSD:^{a,b,c}

Within mean±SD values column, values with different letter were significantly different between the groups.

4 Discussion and Conclusions

According to this study, the patients with the most advance age are very uncomfortable with their oral status, and it shows the highest measurements of more than 70BBV. In addition, 48.9% of 'more than 70 BBV' need dental care and treatment. Therefore, to establish measurements for the promotion of oral health in the elderly it is through the placement of dentists or dental staffs, and offering education for geriatric care workers for dental management in their patients.

5 References

1. Koo, Y.K.: The Effects of oral health behaviors on perceived oral health among the elderly, Graduate School of Public Health, Inje University. 1--47(2010)
2. Walls, A.W.G., Steele, J.G., Sheiham, A., Marcenes, W., Moynihan, P.J.: Oral health and nutrition in older people. *J. Public Health Dent.* 60(4), 304--307(2000)
3. Park, S.C., Jung, M.H., Choi, S.M.: A Study on Dental Health and Chewing ability of Patients Hospitalized in Geriatric Hospitals of Daegu. *J Korean Acad dental Technology.* 33(3), 237--246(2011)
4. Shin, S.M.: A Study on the Oral Health Education Experiences and Needs of the Elderly. [Master's Thesis]: The graduate school of legal studies and public administration Dankook University. (2010)
5. Mcnamara T. F, Alexander JF, Lee M.: The role of microorganisms in the production of oral malodor. *Oral Surg Oral Med Oral Pathol.* 34(1), 41--48(1972)