JRSSEM 2023, Vol. 03, No. 01, 14 – 21
E-ISSN: 2807 - 6311, P-ISSN: 2807 - 6494

SOCIODEMOGRAPHIC FACTORS ASSOCIATED WITH ORAL HEALTH-RELATED QUALITY OF LIFE AMONG ELDERLY POPULATION

Yufitri Mayasari[1]
Mutiara Rina Rahmawati Ruslan[2]
Sarah Mersil[3]
Elin Hertiana[4]
Tirani Bina Viraningtyas[5]
[1,2]Department of public health and preventive dentistry, Faculty of Dentistry, Universitas Prof.Dr.Moestopo (Beragama), Jakarta, Indonesia
[3]Department of Oral Medicine, Faculty of Dentistry, Universitas Prof.Dr.Moestopo (Beragama), Jakarta, Indonesia
[4]Department of Prosthodontia, Faculty of Dentistry, Universitas Prof.Dr.Moestopo (Beragama), Jakarta, Indonesia
[5]Faculty of Dentistry, Universitas Prof.Dr.Moestopo (Beragama), Jakarta, Indonesia
Email: yufitrimayasari@dsn.moestopo.ac.id
*Correspondence author: yufitrimayasari@dsn.moestopo.ac.id

ABSTRACT: Health-related quality of life includes physical, functional, social and emotional well-being in individuals during their lifetime. Oral health status significantly affects the quality of life in elderly population. The aim of the study was to analyze sociodemographic factors associated with oral health-related quality of life among elderly population. **Methods:** a cross-sectional study was undertaken in 20-23 February 2022 with 75 elderly people aged 60 years and older. This sample size was representative of the geriatric population living at home in the RW 02, Kelurahan Sukahati, Kecamatan Cibinong, Kabupaten Bogor. Participants were interviewed at home by trained interviewers using a 15-item questionnaire that included socio-demographic indicators (gender and age). Participants' OHRQoL were evaluated using a validated Indonesian version of GOHAI. The questionnaire consisted of 12 questions, with answers ranging from 1 to 5. GOHAI evaluates three aspects: (A) Physical functions such as speaking, eating and swallowing. (B) Dissatisfaction with appearance and psychosocial effects, including contact with others, self-esteem for oral health, and concerns about appearance. (C) Pain or discomfort, including taking medication to relieve pain. **Results:** a total of 75 participants completed the questionnaire. Most of the participants were between 60-69 years old (52%). The study population included 33 men (44%) and 42 women (56%). Most of the participants reported a poor OHRQoL score (GOHAI ≤ 56). There was significantly associated between age and gender with GOHAI category ($p = 0.026$, CI 95%; $p = 0.000$, CI 95%). **Conclusion:** most of respondents reported a poor oral health related quality of life. Sociodemographic factors (age and gender) associated with oral health related quality of life in elderly people.

Keywords: elderly, oral health, quality of life

INTRODUCTION

The relationship between general health and oral health status is more evident among this age group. An elderly with oral diseases may experience a poor quality of life, and a deterioration in nutritional status often affects chewing and swallowing abilities, as well as taste sensation. Oral health is an integral part because the oral cavity is the gateway to overall health. Aging causes a decrease in organ function as well as various physical changes (Shreshtha, 2020). There are a lot of changes in oral conditions, such as loss of keratin in the mucosa, dehydration of the mucosal tissue, reduced epithelium in the mucosa, and fiber degradation in the periodontal ligament (Shokouhi et al., 2019). These condition can disturb their quality of life. Oral health greatly influences mastication, food selection, body weight, pronunciation, taste, hydration, appearance, and psychosocial behavior and therefore oral health is an important part of public health which has an impact on a person's quality of life for the rest of his life (de Oliveiraõ et al., 2021; Jill C. Cash & Cheryl A. Glass, 2019).

Researchers in recent years have focused more on the study of oral health-related quality of life (OHRQoL). One of the most commonly employed tools to assess OHRQoL among the elderly is the Geriatric/General Oral Health Assessment Index (GOHAI). This tool has been used world- wide and has been significantly associated with subjective oral and general health among the elderly (Zhi et al., 2018).

The Geriatric Oral Health Assessment Index (GOHAI) contains 12 items originally developed for use with older adult populations, although more recently it has also been applied to populations of younger adults. It measures patient reporting with oral functional problems and also assesses the psychosocial impacts associated with oral dis- ease. It is based on three suppositions, that a) oral health can be measured using self-evaluation, b) levels of oral health vary individually and this variation can be demonstrated using measurement based on a person's self-perception, and c) self-perception has been identified as predictive of oral health (Rekhi et al., 2018).

The aim of the study was to analyze sociodemographic factors associated with oral health-related quality of life among elderly population.

METHODS

A cross-sectional study was undertaken in 20-23 February 2022 with 75 elderly people aged 60 years and older. This sample size was representative of the geriatric population living at home in the RW 02, Kelurahan Sukahati, Kecamatan Cibinong, Kabupaten Bogor. The study was approved by the ethics committee of Faculty of Dentistry, Universitas Prof.Dr.Moestopo (B) Jakarta (Register

number 4/KEPK/FKGUPDMB/II/2022) and informed consent was obtained from all participants.

Participants were interviewed at home by trained interviewers using a 15-item questionnaire that included socio-demographic indicators (gender and age). Participants' OHRQoL were evaluated using a validated Indonesian version of GOHAI. The questionnaire consisted of 12 questions, with answers ranging from 1 to 5. The total score was calculated by adding the answer code for each question. The final score of 5760 reflects satisfactory oral health. GOHAI evaluates three aspects: (A) Physical functions such as speaking, eating and swallowing. (B) Dissatisfaction with appearance and psychosocial effects, including contact with others, self-esteem for oral health, and concerns about appearance. (C) Pain or discomfort, including taking medication to relieve pain. Due to the small number of participants with a score of 50 or less, these participants were combined with participants with a score of 51-56 and collectively assigned to the poor oral hygiene category. Therefore, the final GOHAI score included "satisfactory oral health" (≥57) and "poor oral health (≤56)" (Mitri et al., 2020).

Statistical analysis was performed using a computerized statistical program. Variables were represented as distributions and percentages. They were presented with a corresponding 95% confidence interval (CI). Comparisons were tested for statistical significance using the chi-square test and Pearson chi-square. The difference was significant for P-values below 0.05.

RESULTS AND DISCUSSION

RESULT

A total of 75 participants completed the questionnaire. Most of the participants were between 60-69 years old (52%). The study population included 33 men (44%) and 42 women (56%).

Table 1. Patient's characteristic (n=75)

Variables	n	%
Demographic factors		
Age		
60-69 y	39	52
70-79 y	22	29.3
≥ 80 y	14	118.7
Gender		
Male	33	44
Female	42	56

Based on table 2, based on the respondents' answers to the 12 GOHAI questionnaire questions, the results were obtained that in the first question 22.7% of respondents stated that they limited food consumption, in the second

question 25.3% of respondents had problems when biting and chewing, twenty-nine point three percent sometimes swallow comfortably , the majority or 54.7% of respondents never had problems speaking unclearly, for the fifth question 33.3% of respondents stated that they rarely felt uncomfortable consuming food. Furthermore, for the sixth question, 49.3% of respondents did not experience limited socialization with other people, twenty-eight point seven percent were never dissatisfied with the condition of their teeth, gums or dentures. The eighth question, 33.3% of respondents said they rarely used drugs to reduce pain, the ninth question 29.3% of respondents were sometimes worried about the condition of their teeth, gums or dentures. The tenth question 45.3% of respondents never feel nervous about the condition of their teeth, gums or dentures, then the eleventh question 36% of respondents feel uncomfortable when eating in front of other people, and 26.7% of respondents rarely feel sensitive to hot, cold or sweet foods (Table 2).

Table 2. Distribution of item responses of GOHAI Index

Variables	Never		Seldom		Sometimes		Often		Always	
	n	%	n	%	n	%	n	%	n	%
Q1 : Limited kinds of food	10	13.3	16	21.3	27	36.0	17	22.7	5	6.7
Q2 : trouble biting or chewing	10	13.3	19	25.3	21	28.0	16	21.3	9	12.0
Q3 : problems swallowing comfortably	19	25.3	21	28.0	22	29.3	10	13.3	3	4.0
Q4 : problems speaking clearly	41	54.7	12	16.0	14	18.7	6	8.0	2	2.7
Q5 : discomfort when eating any kind of food	12	16.0	25	33.3	21	28.0	13	17.3	4	5.3
Q6 : limited contact with people	37	49.3	19	25.3	13	17.3	5	6.7	1	1.3
Q7 : pleased with looh of teeth	21	28.0	20	26.7	21	28.0	11	14.7	2	2.7
Q8 : used medication to relieve	24	32.0	25	33.3	18	24.0	6	8.0	2	2.7
Q9 : worried abouth teeth, gums or dentures	19	25.3	21	28.0	22	29.3	10	13.3	3	4.0
Q10 : self-conscious about teeth, gums or dentures	34	45.3	17	22.7	12	16.0	10	13.3	2	2.7
Q11 : uncomfortable eating in front of others	27	36.0	18	24.0	19	25.3	8	10.7	3	4.0
Q12 : sensitive to hot, cold or sweet foods	18	24.0	20	26.7	15	20.0	17	22.7	5	6.7

Most of the participants reported a poor OHRQoL score (GOHAI ≤ 56). Table 3 showed the bivariate relationship between the GOHAI category and the socio-demographic characteristics of the study sample. Among the participants, age factors were significantly associated with a decrease in OHRQoL score (p = 0.026, CI 95%). In addition, the male group had lower OHRQoL score compared to females (p = 0.000, CI 95%). (Table 3)

Table 3. Oral Health-related Quality of Life and sociodemographic characteristics of elderly participants (n = 75)

		OHRQoL (GOHAI score)		
Variables	**Total**	**Poor OHRQoL (GOHAI ≤ 56)**	**Satisfactory OHRQoL (GOHAI ≥ 57)**	**p-value**
Age				
60-69 y	39 (52%)	35	4	0.026**
70-79 y	22 (29.3%)	19	3	
≥ 80 y	14 (18.7%)	13	1	
Gender				
Male	33 (44%)	37	5	0.000*
Female	42 (56%)	30	3	

*Chi-square test, CI 95%, p ≤ 0.05

**Pearson Chi-square test, CI 95%, p ≤ 0.05

DISCUSSION

The OHRQL assessment is important for public health because it can be used to describe the impact of oral health on older people. There's tqo sociodemographic factors in this study, age and gender. Studies have shown that age is associated with GOHAI scores. (Table 3.). Results from other studies suggest that younger people may have more dental problems, which may be linked to lower GOHAI scores. Otherwise, aesthetic needs are greater for young people who have more oral expectations. Also, the older you are, the less likely you are to have diabetes recently. These people have more time to take care of their teeth. In the early stages of illness (or diagnosis), people should learn how to manage chronic illnesses with potential problems and needs later (de Oliveiraõ et al., 2021; Hägglin et al., 2005; Murariu et al., 2010; Raphael, 2017).

Previous studies show diverse results with regard to age and GOHAI scores. The varying results regarding age and OHRQL and meant that many studies (like the present) are conducted in narrow age spans resulting in no or small age differences. A lower impact in elderly people may be explained by the fact that older peoples'expectations were founded when oral health was poor

and dental care was less effective (de Oliveiraõ et al., 2021; Mitri et al., 2020; Murariu et al., 2010; Shokouhi et al., 2019). It might also be the result of a mind shift brought on by getting older, such as the gerotrans cendence theory's acceptance of life as it is. Additionally, the emphasis of concern changes with time, which is partly consistent with the results of the current study. So, when it came to the item "unhappy with the appearance of teeth, gums, or dentures," the older age group reported fewer issues. Pain and discomfort ('sensitive teeth or gums') and psychosocial impacts were the four most often reported difficulties. The difference result from Morgan, et al (2017) study found there is no a statistically significant relationship between gender and OHRQoL score of the respondents.(Morgan et al., 2017) Variations in study settings, cultural variations, and sexual inequality in benefitting from the data could all contribute to the results being different. Consequently, additional research must be done on the subject.

The results of this study showed that, across all areas, women's health-related QoL considerably lagged behind that of males with comparable mean ages. This outcome is consistent with findings from related studies. There is a significant differences in GOHAI score were found for gender status and also in the Chi-square analyses presented in Table 3, as well as for two separate GOHAI items 'poor OHRQoL" and "satisfactory OHRQoL" the index was reversely related to age. According to our findings, women are more prone to physical function impairments and physical role constraints, which lowers their scores on the subscale measuring physical pain. Due to a lack of outdoor activities and limited financial means, they are also more susceptible to emotional role restrictions and have worse social relationships. This observation is similar to studies in Britain where little or no difference was observed in the QoL of elderly male and female respondents. This may be because elderly people face the same life situations that could impact on QoL whether they are males or females (Hajian-Tilaki et al., 2017). This finding is also matched with the study from Datta et al, gender had a significant role in determining QOL of elderly. Females scored significant poor QOL in the physical health domain in OHRQoL questionnaire (Datta et al., 2015). Study by Soren et al (2022), there is no appreciable gender-related disparities in QOL ratings were discovered (Chowdhury & Chakraborty, 2017). There was a substantial difference between the mean scores of males and girls in the physical domain, but not in the other domains. Researchers from Kerala came to the conclusion that most of the women in their study had lower educational levels, were unemployed, and had no income; their poor mental health condition may have been caused by their financial and physical dependence on their offspring.

CONCLUSION

The results of this study showed that, across all areas, women's health-related QoL considerably lagged behind that of males with comparable mean ages. This outcome is consistent with findings from related studies. There is a significant differences in GOHAI score were found for gender status and also in the Chi-square analyses presented in Table 3, as well as for two separate GOHAI items 'poor OHRQoL" and "satisfactory OHRQoL" the index was reversely related to age. According to our findings, women are more prone to physical function impairments and physical role constraints, which lowers their scores on the subscale measuring physical pain. Due to a lack of outdoor activities and limited financial means, they are also more susceptible to emotional role restrictions and have worse social relationships.This observation is similar to studies in Britain where little or no difference was observed in the QoL of elderly male and female respondents.

REFERENCES

Chowdhury, S., & Chakraborty, P. pratim. (2017). Predictors of quality of life among geriatric population in a tribal dominant state of India: A community based analytical study. *Journal of Family Medicine and Primary Care*, *6*(2), 169–170. https://doi.org/10.4103/jfmpc.jfmpc

Datta, D., Datta, P., & Majumdar, K. (2015). Association of quality of life of urban elderly with socio-demographic factors. *International Journal of Medicine and Public Health*, *5*(4), 274. https://doi.org/10.4103/2230-8598.165944

de Oliveiraõ, L. F. S., Wanderleyõ, R. L., de AraÚjoõ, E. C. F., de Medeiros, M. M. D., de Figueredo, O. M. C., Pinheiro, M. A., Garcia, R. C. M. R., & Cavalcantiõ, Y. W. (2021). Factors associated with oral health-related quality of life of institutionalized elders. *Brazilian Oral Research*, *35*, 1–9. https://doi.org/10.1590/1807-3107BOR-2021.VOL35.0015

Hägglin, C., Berggren, U., & Lundgren, J. (2005). A Swedish version of the GOHAI index: Psychometric properties and validation. *Swedish Dental Journal*, *29*(3), 113–124.

Hajian-Tilaki, K., Heidari, B., & Hajian-Tilaki, A. (2017). Health Related Quality of Life and Its Socio-Demographic Determinants among Iranian Elderly People: a Population Based Cross-Sectional Study. *Journal of Caring Sciences*, *6*(1), 39–47. https://doi.org/10.15171/jcs.2017.005

Jill C. Cash, M. S. N. A. P. N. F. N. P. B. C., & Cheryl A. Glass, M. S. N. A. W. B. C. (2019). *Adult-Gerontology Practice Guidelines, Second Edition* (2nd ed.). Springer Publishing Company.

Mitri, R., Fakhoury Sayegh, N., & Boulos, C. (2020). Factors associated with oral health-related quality of life

among Lebanese community-dwelling elderly. *Gerodontology*, *37*(2), 200–207. https://doi.org/10.1111/ger.12463

Morgan, U.-O., Etukumana, E., & Abasiubong, F. (2017). Sociodemographic factors affecting the quality of life of elderly persons attending the general outpatient clinics of a tertiary hospital, South-South Nigeria. *Nigerian Medical Journal*, *58*(4), 138. https://doi.org/10.4103/nmj.nmj_124_17

Murariu, A., Hanganu, C., & Bobu, L. (2010). Evaluation of the Reliability of the Geriatric Oral Health Assessment Index (GOHAI) in Institutionalised Elderly in Romania: A Pilot Study. *Ohdmbsc*, *IX*(1), 11–15.

Raphael, C. (2017). Oral health and aging. *American Journal of Public Health*, *107*, S44–S45. https://doi.org/10.2105/AJPH.2017.303835

Rekhi, A., Marya, C. M., Nagpal, R., & Oberoi, S. S. (2018). Assessment of Oral Health Related Quality of Life Among the Institutionalised Elderly in Delhi, India. *Oral Health & Preventive Dentistry*, *16*(1), 59–66. https://doi.org/10.3290/j.ohpd.a39818

Shokouhi, E., Mohamadian, H., Babadi, F., Cheraghian, B., & Araban, M. (2019). Improvement in oral health related quality of life among the elderly: A randomized controlled trial. *BioPsychoSocial Medicine*, *13*(1), 1–11. https://doi.org/10.1186/s13030-019-0170-3

Shreshtha, R. (2020). Challenges in Geriatric Dental Patient Management in Covid-19 Pandemic. *Journal of Aging and Geriatric Psychiatry*, *4*(2), 26–27.

Zhi, Q. H., Zhou, Y., Tao, Y., Wang, X., Feng, X. P., Tai, B. J., Hu, D. Y., Wang, B., Si, Y., Wang, C. X., Zheng, S. G., Liu, X. N., Rong, W. S., Wang, W. J., & Lin, H. C. (2018). Factors Impacting the Oral Health-related Quality of Life in Chinese Adults: Results from the 4th National Oral Health Survey. *The Chinese Journal of Dental Research: The Official Journal of the Scientific Section of the Chinese Stomatological Association (CSA)*, *21*(4), 259–265. https://doi.org/10.3290/j.cjdr.a41084