

Oral Health Needs Assessment of Geriatrics Living in Mansoura Center

Kerollus Sh. Sheta Barsoum¹, Salwa A. Hegazy², Nasr M. Attia³

Abstract:

Objectives: The quality of life is highly linked to the oral health in elderly people. This study was performed to assess differences in oral health needs using normative and sociodental approaches among geriatric patients in Mansoura city. **Materials and Methods:** This study was of descriptive cross-sectional design based on close ended questionnaires and interviews in addition to the clinical examinations of both past caries experience and periodontal disease state of the patients. Five hundred healthy participants aged ≥ 60 of both genders were randomly selected from urban and rural areas in Mansoura city. **Results:** Only 2% of the sample had oral lesions and just 2.8% showed root caries. On the other hand 86.8% had periodontitis, 58.8% had decayed teeth, 99.2% had filled teeth, and 65.8% had missed teeth. Impact related needs of the studied population showed that the highest percentage 23.4%, 23.2% significantly reported their teeth as average and good respectively, while the lowest percentage 4%, 7.2% significantly described their teeth as excellent and very poor. Regarding gums the highest percentage 32.8%, 25.4% significantly labeled their gums as average and good respectively, while the lowest percentage 0.6%, 5.2% significantly defined their gums as excellent and very poor. Also, the mean impact of physical domain was 1.73 ± 0.64 , psychological domain was 1.56 ± 0.83 and social domain was 1.40 ± 0.57 which indicated that the most participants did not have problems. In Propensity related needs 36.4% did not clean their teeth, and 27% cleaned once a day and 59.2% used toothbrush with toothpaste. Results showed 64.6% did not smoke cigarettes, and 78% did not smoke sheesha. **Conclusion:** The elderly population in urban and rural areas in Mansoura center had low mean impact related needs regarding the three domains. There is an urgent need to persuade people to adopt preventive therapy while also seeking medical interventions to enhance the retention of natural teeth into advanced age. Provision of oral health care to older people will not only lead to economic savings but will also reduce the burden of the caregivers.

Introduction

Oral health has been increasingly recognized as a factor that affects the quality of life of individuals. Oral health is essential to promote general health and quality of life. It characterizes oral health as "being free from oral and facial pain, oral and throat cancer, and oral infection and sores. Need in health care is commonly defined as the capacity to benefit. The sociodental approach was proposed as a method for assessing oral health needs by integrating the impact of oral health on quality of life with normative assessment and measures of propensity (which based on patient request of treatment) to adopt health promoting behaviors of the individuals.¹⁻⁵

Normative methods (which are determined by researchers only) are based on clinical indices, and have been traditionally used to assess dental treatment needs. However, normative assessment of oral health needs has significant variations among dentists with regard to diagnosis and treatment needs. Moreover, it does not reflect comprehensive concepts of oral health needs because social and subjective aspects of health, such as the impact of oral health on quality of life and well-being are not considered.⁵

Impact-related needs that combine normative need and oral health-related quality of life OHRQoL is useful to identify people in need of immediate dental care. For instance, individuals experiencing functional limitation (e.g.

difficulty chewing), or social disability (e.g. avoiding social interaction) which are attributed to oral conditions should be prioritized.⁴

The OHRQoL personal assessment "reflects people's comfort when eating, sleeping, and engaging in social interaction; their self-esteem and their satisfaction with oral health. It is the result of the interaction between oral health conditions, social factors, and the rest of the body.^{6,7}

In 2011, Sischo and Border⁶, reported that the social indicators of quality of life related to oral health and measurement tools have been developed. In addition, there is an opportunity to look at the way of social life including self-esteem, social interaction and school and professional performance.

In 2018, with increased focus on health promotion and disease prevention, Shokry et al,⁸ suggested that HRQoL and Oral Health Related Quality of Life (OHRQoL) have to integrate positive and negative concepts of oral health and health effects. For example, people may seek oral health care through preventive treatment (such as cleaning) or optional treatment (e.g. orthodontics). This indicates the extent to which the patient is able to enhance his health and affect its aspects of life.

Ortiz-Barrios et al,⁹ preformed a study on 228 patients with ≥ 60 years to determine the impact of poor OHRQoL in community dwelling older adults in Mexico City. The sociodemographic characteristics and their OHRQoL according to the Geriatric/General Oral Health Assessment Index (GOHAI) were obtained in addition to the clinical evaluation of their oral health. It was found that poor oral

¹Postgraduate MSc student, Department of Dental Public health & Preventive dentistry, Faculty of Dentistry, Mansoura University. dr.kerollus@hotmail.com

²Professor of Dental Public health & Preventive dentistry, Faculty of Dentistry Mansoura University.

³Lecturer of Dental public health & Preventive dentistry, Faculty of Dentistry, Mansoura University.

health was associated with a negative impact on the OHRQoL.

Rosli et al.¹⁰ conducted a research to assess the association between OHRQoL and nutritional status among a group of 446 older adults aged 50 and above in Malaysia. Respondents were interviewed for their demographic characteristics and oral health perception and body mass index (BMI). GOHAI was used to measure OHRQoL. The result showed that the mean GOHAI scores were $53.3 \pm$ S.D, indicating low perception of oral health. About 81.6% of the respondents had moderate to low perception of oral health. There was a statistically significant association between the GOHAI and BMI indices.

According to the previous data there is a lack of studies about the socio-dental approach in assessment of the normative needs in the Middle East especially in Egypt. So, this study was conducted to assess the oral health needs using the normative method and the socio-dental approach among a sample of geriatrics living in different conditions in Mansoura city.

Materials and Methods:

The approval of the Ethical Committee of the Faculty of Dentistry, Mansoura University was firstly obtained under the code of (05080518). Also, informed consents were obtained from patients during completing the questionnaire and before their clinical examination. Any diseased patients were referred to the specialized site and followed up for service utilization.

This study was a descriptive cross-sectional design based on close ended questionnaires interview, in addition to clinical examinations of the patients. This survey was started in May (2018) and finished in May (2020), it was designed according to the national pathfinder survey methodology of WHO, (2013).

This study was conducted on 500 subjected of both gender of age 60 years or above. They were randomly selected from Mansoura city and surrounding villages. There were a total of (41) villages, among them 6 villages were selected according to the presence of central hospitals in those villages for performing the examination.

The inclusion criteria: the participants fulfilled the following criteria

- 1- Patients aged 60 years or more
- 2- Physically independent
- 3- With no mental disability.

Study outline:

Questionnaire was edited form WHO² questionnaire and mixed by GOHAI consisted of 3 sections then clinical examination by counting the number of remaining teeth. DMFT¹¹. Index was applied to the crowns of the permanent dentition and was expressed as the total number of teeth

that were decayed (D), missed due to caries (M), and filled due to caries (F) in an individual. KATZ¹² Index was applied by the same criteria of DMFT for root caries and CPITN¹³ were divided into six parts called Sextants. The two molars in each posterior sextant were paired for recording and, if one was missing, there was no replacement. If no index teeth or tooth is present in a sextant qualifying for examination, all the remaining teeth in that sextant were examined and the highest score was recorded as the score for the sextant.

Results:

Table (1) showed the clinical variables in patient's mouth which showed just 2% from sample have oral lesions and just 2.8% showed root caries. This is why we neglected these results in the coming tables, on the other hand most of the participants have periodontists (86.8%), decayed teeth (58.8%), filled teeth (99.2%) and missed teeth (65.8%).

Table (1): Clinical findings of the study sample:

	Variables	No. (500), n: (%)
1-	Oral lesions	10 (2%)
2-	Periodontists	434 (86.8%)
3-	Decayed	294 (58.8%)
4-	Filled	496 (99.2%)
5-	Missed	329 (65.8%)
6-	Root caries	14 (2.8%)

No: total number of cases n: number of cases in each variable %: percentage

Table (2) in the impact related needs of the studied population. Results showed statistically significant differences between perceptions of the studied groups $p < 0.001$. In the physical domain, the highest percentage reported significantly uncomfortable swallowing (74.2%), while the lowest percentage significantly described their condition as don't know and very often with the same percentage (4.2%). About (1.2% and 1.8 respectively) did not know if they had biting troubles and sensitivity to hot and cold foods. The mean impact of the physical domain was (1.73 ± 0.64) .

In the psychological domain, the lowest percentage was for don't know impact while the highest was presented by No impact (1.8% and 61.4%). Results revealed statistically significant differences between perceptions of the studied groups ($p < 0.001$). The mean impact of the psychological domain was (1.56 ± 0.83)

Regarding the social domain, the lowest percentage exhibited no difficulty in speech/trouble pronouncing words (1.8%). On the other hand, the highest percentage did not felt tolerant to people who are close to them (77.2%). The differences were significant ($p < 0.001$). The mean of the social impact was (1.40 ± 0.57) .

Table (2a): Impact related needs of the study sample related physical domain. No=500

Q	Section II: Impact related need questions	Don't know	No	Some times	Fairly often	Very often	Mean ± SD.	χ^2	p
		No. (%)	No. (%)	No. (%)	No. (%)	No. (%)			
	Because of the state of your teeth or mouth, how often have you experienced any of the following problems during the past 12 months?	0	1	2	3	4	1.73 ± 0.64		
A	Difficulty in biting foods	6 (1.2%)	209 (41.8%)	126 (25.2%)	56 (11.2%)	103 (20.6%)	2.08±1.18	233.38*	<0.001*
B	Difficulty chewing foods	3 (0.6%)	187 (37.4%)	114 (22.8%)	104 (20.8%)	92 (18.4%)	2.19±1.14	172.54*	<0.001*
D	Dry mouth	93 (18.6%)	296 (59.2%)	35 (7.0%)	28 (5.6%)	48 (9.6%)	1.28±1.13	505.78*	<0.001*
M	Have worsened in sense of taste	25 (5.0%)	365 (73.0%)	41 (8.2%)	47 (9.4%)	22 (4.4%)	1.35±0.88	882.24*	<0.001*
O	Meals interrupt	6 (1.2%)	309 (61.8%)	64 (12.8%)	65 (13.0%)	56 (11.2%)	1.71±1.08	569.74*	<0.001*
Q	Uncomfortable to swallow	21 (4.2%)	371(74.2 %)	59 (11.8%)	28 (5.6%)	21 (4.2%)	1.31±0.82	927.88*	<0.001*
R	Any medication to relive pain	9 (1.8%)	204 (40.8%)	147 (29.4%)	94 (18.8%)	46 (9.2%)	1.93±1.02	242.58*	<0.001*
S	Sensitive to hot and cold food	9 (1.8%)	190 (38.0%)	144 (28.8%)	128 (25.6%)	29 (5.8%)	1.96±0.97	241.42*	<0.001*

Table (2b): Impact related needs of the study sample related psychological domain. No=500

Q	Section II: Impact related need questions	Don't know	No	Some times	Fairly often	Very often	Mean ± SD.	χ^2	p
		No. (%)	No. (%)	No. (%)	No. (%)	No. (%)			
	Because of the state of your teeth or mouth, how often have you experienced any of the following problems during the past 12 months?	0	1	2	3	4	1.56 ± 0.83		
e	Felt embarrassed due to appearance of teeth	33 (6.6%)	301 (60.2%)	81 (16.2%)	30 (6.0%)	55 (11.0%)	1.55±1.08	521.76*	<0.001*
f	Felt tense because of problems with teeth or mouth	21 (4.2%)	318 (63.6%)	80 (16.0%)	23 (4.6%)	58 (11.6%)	1.56±1.06	618.58*	<0.001*
p	Less satisfying in general	9 (1.8%)	307 (61.4%)	91 (18.2%)	71 (14.2%)	22 (4.4%)	1.58±0.91	581.36*	<0.001*

Table (2c): Impact related needs of the study sample related social domain. No=500

Q	Section II: Impact related need questions	Don't know	No	Some times	Fairly often	Very often	Mean ± SD.	χ^2	p
		No. (%)	No. (%)	No. (%)	No. (%)	No. (%)			
	Because of the state of your teeth or mouth, how often have you experienced any of the following problems during the past 12 months?	0	1	2	3	4	1.40 ± 0.57		
c	Difficulty with speech/trouble pronouncing words	9 (1.8%)	309 (61.8%)	65 (13.0%)	45 (9.0%)	72 (14.4%)	1.72±1.13	569.96*	<0.001*
g	Have avoided smiling because of teeth	3 (0.6%)	337 (67.4%)	82 (16.4%)	31 (6.2%)	47 (9.4%)	1.56±0.97	734.72*	<0.001*
h	Had sleep that is often interrupted	12 (2.4%)	376 (75.2%)	50 (10.0%)	49 (9.8%)	13 (2.6%)	1.35±0.79	965.90*	<0.001*
i	Have taken days off work	26 (5.2%)	374 (74.8%)	63 (12.6%)	13 (2.6%)	24 (4.8%)	1.27±0.80	952.66*	<0.001*
j	Difficulty doing usual activities	30 (6.0%)	360 (72.0%)	81 (16.2%)	16 (3.2%)	13 (2.6%)	1.24±0.72	874.86*	<0.001*
k	Felt less tolerant of spouse or people who are close to you	9 (1.8%)	386 (77.2%)	52 (10.4%)	37 (7.4%)	16 (3.2%)	1.33±0.77	1034.06*	<0.001*
l	Have reduced participation in social activities	21 (4.2%)	377 (75.4%)	56 (11.2%)	30 (6.0%)	16 (3.2%)	1.29±0.78	968.62*	<0.001*

Table (3) in the next table the propensity related needs of the studied population regarding the smoking habits. Most of the participants significantly reported that they never smoked cigarettes, sheesha or any other type (64.6%, 78%, and 86.2% respectively).

Table (3): Propensity related needs (smoking habits) No= (500)

Q	Section III: Propensity related need questions	Never	Seldom	Several times a month	Once a week	Several times a week	Every day	Mean ±SD.	χ^2	p
		n. (%)	n. (%)	n. (%)	n. (%)	n. (%)	n. (%)			
6	How often do you use any of the following types of tobacco?									
	Cigarette	323 (64.6%)	7 (1.4%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	170 (34.0%)	2.71±2.36	299.668*	<0.001*
	Sheesha	390 (78.0%)	57 (11.4%)	13 (2.6%)	7 (1.4%)	12 (2.4%)	21 (4.2%)	1.51±1.23	1373.82*	<0.001*
	Other specific	431 (86.2%)	32 (6.4%)	3 (0.6%)	0 (0.0%)	9 (1.8%)	25 (5.0%)		1375.0*	<0.001*

n: number of cases in each variable
%: percentage

No: total number of cases
 χ^2 : Chi square test

*: Statistically significant at $p \leq 0.05$

Discussion:

Advances in medicine and dentistry have resulted in people living longer and retaining more of their teeth. This prolonged retention of natural teeth results in an increased incidence of oral diseases in older adults in general and, to a greater extent, in functionally dependent older adults. Therefore, aging is both a medical and dental problem that indicates an increased demand for community health services.²

The aim of the present study was to determine the OHRQOL of elderly patients over 60 years of age. The self-perceived oral health was assessed by means of a modified questionnaire from the WHO questionnaire for the elderly, along with the patient's oral health status related to quality of life. The total study sample was 500 participants. They were randomly selected from rural and urban areas of Mansoura city.

As expected, patients with oral complaints had lower overall health than the normal group. Speech impairment, emotional state, dental cleaning, physical activity, and social contacts were more experienced among the case group. So oral health can impair daily functions.

The clinical finding of the present study showed that nearly almost all of participants had filled teeth and a low percentage of root caries (2.8%), in addition to the increased percentage of missed teeth with different stages of periodontitis. The periodontitis could be explained by the cumulative nature of periodontal disease and its affection on life expectancy of teeth. The high number of participants had filled teeth may be due to the high level of their knowledge which make them caring for the oral health; they lived in areas where central hospitals are available.

The present findings showed that the participants who described the status of their teeth as good and average were the highest percentage (23.2% and 23.4%), this may be explained by their ignorance to the status and degree of healthy teeth and gums. Also, most of them described their gums as average with (32.8%). These results are in agreement with a Chinese study by Rosenkötter *et al.*,³ who reported that the largest number of the studied population described their teeth as healthy and most of them describe their gums between average and healthy gums.

In the present study, the three domains of the impact related needs (physical, psychological, and social) had low means. This indicated that most of the participants had no or little impact in each domain.

The present study indicated that most of the participants significantly reported that they never smoked cigarettes, sheesha or any other type. This result may explain the low percentage of participants having oral lesions (2%).

Also, the incidence of periodontal problems differs significantly between men and women. Supra-gingival and sub-gingival calculus were significantly predominant in males in most sextants while pockets more than 6 mm were predominant in females in most sextants. This could be

explained as women spend more time at home, so they use that time to take care of oral health and clean their teeth from external deposits. However, pockets are increased in the old age due to the gingival recession, besides the osteoporosis in females.

There are many studies which discussed DMFT, CPITN and sociodental approach separately but a few studies discussed all of those factors in the same study. This makes the present study more sufficient and adequate to the elder age above 60 years as it provides clearer image about their oral condition and its relation to their oral health related quality of life. Such data are rare in Egypt.

There was more than one limitation in the present study because it was difficult to contact the participants in their entertainment places. Their transportation to the general hospitals was difficult, and it was so difficult to get WHO probe for conducting the CPITN examination.

Conclusion:

From this study it can be included that:

- 1- The participant's perception of their teeth and gums is average.
- 2- They have low mean total impact related needs in the three domains.
- 3- Nearly half of the participants have bad oral hygiene.

References:

1. Gomes A, Abegg C. The impact of oral health on daily performance of municipal waste disposal workers in Porto Alegre, Rio Grande do Sul State, Brazil. *Cad saude publica.* 2007; 23(7):1707-1714.
2. Organization WH. Oral health assessment. Oral health surveys: Basic Methods, 5th edition. 2013; 125.
3. Rosenkötter N, Vondeling H, Blancquaert I, Mekele O, Kristensen F, Brand A. The contribution of health technology assessment, health needs assessment, and health impact assessment to the assessment and translation of technologies in the field of public health genomics. *Pub Health Genomics.* 2011; 14(1): 43-52.
4. Gherunpong S, Tsakos G, Sheiham A. A sociodental approach to assessing dental needs of children: concept and models. *Int J Paediatr Dent.* 2006; 16(2):81-88.
5. Prado RLd, Saliba NA, Garbin CAS, Moimaz SAS. Oral impacts on the daily performance of Brazilians assessed using a sociodental approach: analyses of national data. *Braz Oral Res.* 2015; 29(1):1-9.
6. Sischo L, Broder H. Oral health-related quality of life: what, why, how, and future implications. *J Dent Res.* 2011; 90(11):1264-1270.
7. Organization WH. CAPP oral health Country/area profile project. <http://www.mah.se/CAPP/Country-Oral-Health/Profiles/WPRO/Cambodia/Oral-Health-Man-power/>. 2013.

8. Shokry A, Adel M, Rashad A. Educational program to improve quality of life among elderly regarding oral health. *Fut Dent J.* 2018; 4(2):211-215.
9. Ortíz-Barrios L, Granados-García V, Cruz-Hervert P, Moreno-Tamayo K, Heredia-Ponce E, Sánchez-García S. The impact of poor oral health on the oral health-related quality of life (OHRQoL) in older adults: the oral health status through a latent class analysis. *BMC oral health.* 2019; 19(1):141-148.
10. Rosli T, Chan Y, Kadir R, Hamid T. Association between oral health-related quality of life and nutritional status among older adults in district of Kuala Pilah, Malaysia. *BMC public health.* 2019; 19(4):547-549.
11. Jackson D, Slack G. An investigation into the use of indices devised for the clinical measurement of caries degree. *Arch Oral Bio.* 1963;8(2):55-64.
12. Katz R. Assessing root caries in populations: the evolution of the root caries index. *J Pub Health Dent.* 1980; 40(1):7-16.
13. Ainamo J. Development of the (WHO) (CPITN). *Int dent J.* 1982; 32:281-291.