Knowledge and Reported Practice Among Elderly With Oral and Dental Problems at Assiut City, Egypt.

Esteer Ibrahim Ghayth[1], Hoda Diab Fahmy[2], Neama Mohamed El-moghrabi[3] & Nermeen Mahmoud Abd El-Aziz[4].

1. Assistant lecturer of Geriatric Nursing Department, Faculty of Nursing, Sohag University, Egypt.
2. Professor of Community Health nursing, Faculty of nursing, Assiut University Egypt.
3. Assistant Professor of community Health Nursing, Faculty of Nursing, Assiut University, Egypt.
4. Assistant Professor of Gerontological Nursing, Faculty of Nursing, Assuit University, Egypt.

Abstract

Study aimed to assess oral health knowledge, and reported practices among elderly with oral and dental problems. **Design**: Descriptive research design was used**. Settings**: This study was conducted in dental out-patients clinics of of the General Assiut Hospital & the El-Eman General Hospital Quota sample was used to select elderly; the total number of sample was 1300 elderly. **Tools**: Three tools were used. **Tool I:** structured interview form. It includes socio-demographic characteristics, medical and oral health history, **Tool II**: to assess elderly oral health knowledge, it includes 20 questions. **Tool III**: it includes three parts (reported practice about tooth brushing, reported practice about general oral health care and brief oral health status examination. **Results:** The main results of study showed that total percent of the studied elderly had unsatisfactory knowledge and the vast majority of the studied elderly had inadequate reported practice about tooth brushing. Also it was noticed that more than one third of elderly never clean their mouth, while more than half had unhealthy oral state. **Conclusion**: The total percent and the vast majority of the studied elderly had unsatisfactory knowledge about oral health and inadequate practice about tooth brushing respectively. **Recommendations:** Providing health education program to the elderly people about oral health to improve their knowledge and practice.

Key words: Elderly, Oral Health, Knowledge & Reported Practice.

Introduction

According to the WHO, the global population is increasing at the annual rate of 1.7%, while the population of those over 65 years is increasing at a rate of 2.5%. Both the developed, as well as the lesser-developed countries, are expected to experience significant shifts in the age distribution of the population by 2050. The fastest growing population segment in most countries is the elder people than 80 years, which according to the United Nations estimates will make up nearly 20% of the world's population **(Mohsen et al., 2017)**

The **Central Agency for Public Mobilization & Statistics in Egypt, (2018**), has reported that older people in 2016 was around 8.9%, while the expected percentage will be 10.9% in 2026. The life expectancy for male elders expected to be 19.3 years in 2026.

The process of aging also presents specific concerns related to the oral health of older people including caries, tooth loss, difficulty chewing, reduced salivation, oral cancer, xerostomia, craniofacial pain and discomfort, gingival overgrowth, and oro-facial bone resorption. Although the rate of edentulism in this target population is decreasing as more are retaining more teeth. There is still concern that older people are at risk for oral health diseases **(Reigle & Holm, 2016).**

The presence of systemic disease among elderly not only influences the patient's ability to maintain oral hygiene and promotion of oral health, but can actually be related to the occurrence of certain oral diseases. Thus, planning treatment for the senior dental patient includes an understanding of the chronic diseases the patient lives with daily, as this play a critical role in the acceptance and success of the dental treatment plans **(Abdul Razek et al., 2014)**.

Oral health is an integral part of general health. In the elderly population poor oral health has been considered a risk factor for general health problems. Older adults are more susceptible to oral conditions or diseases due to an increase in chronic conditions and physical/ mental disabilities **(Pandy et al., 2014).** Good oral health is essential for healthy ageing. With older age, there is greater chance the general health and medications will affect the health of the teeth, mouth and gums. Poor oral health causes gum disease, tooth loss and tooth decay. If the mouth is unhealthy, bacteria may build-up and spread infection to other parts of the body causing lung infections, heart disease or a stroke **(Mohsen et al., 2017)**

Gerontological nurses play an essential role in enhancing elderly oral health and be an important component of a successful oral hygiene program. The knowledge and skills of nurses make them act as

counselors for procedure and program development, determine oral care needs of elderly, develop individualized care plans, provide clinical hygiene treatment, make referrals to dentists, and implement oral health programs **(Abd–Allah et al., 2018).**

Significance of the study

Oral health plays a pivotal role in general health. In the elderly population poor oral health has been considered a risk factor for general health problems. Older adults are more susceptible to oral conditions or diseases **(Pandy et al., 2014).**

Mohsen et al., (2017) showed that 61.3% of the studied elderly had dental loss as dental disease, 50% had gum inflammation, 43.3 % had broken teeth, 34.7% had dental caries and 21.3% have discoloration of teeth in Benha city in Egypt. **Mahmoud, (2014)** stated that more than half 55.0%of the studied elderly suffered from toothache, 52.0% had bleeding gums, 50.0% had dental decay &loose teeth, 40.0% had gingivitis and 40.0%had calculus deposition at Damnhour city in Egypt. So the present study has been conducted.

Aim of the study

- To assess knowledge and reported practices of elderly with oral and dental problems.

Research questions

1- What is the level of elderly's knowledge about oral and dental care?
2- What is the level of elderly's reported practice about tooth brushing and general oral health care?
3- Is there a relation between the reported practice and socio-demographic data of elderly?

Subjects & Method

Research design: Descriptive research design was utilized in this study.

Setting: The study was conducted in the dental out-patient clinics of the General Assiut Hospital & the El-Eman General Hospital at Assiut city.

Sample: Quota sample was used to choose the total number of sample (1300 elderly patients) to assess knowledge and reported practice.

Inclusion criteria

- Elderly of both sexes who had 60 years and more with oral and dental problems.
- Elderly able to communicate..

Tools for Collecting Data: This study includes three tools.

Tool I: Structured interview questionnaire form to assess elderly's knowledge and reported practice. It includes two parts:-

Part (one): It includes demographic data as age, sex, resident, marital status, level of education, and occupation.

Part (two): It includes:

1. Medical history for chronic diseases (e.g. Diabetes, hypertension, cardiovascular, hepatic, renal diseases, osteoporosis and osteoarthritis, asthma, and others) and smoking.
2. Past and present history of oral and dental problems

Tool II: to assess elderly oral health knowledge. It include 20 questions: knowledge about oral problems (3 questions), knowledge about oral diseases (tooth decay and dry mouth) (4 questions), knowledge about oral diseases (gum diseases and halitosis) (5 questions), knowledge about oral health care procedures (tooth brushing, flossing, denture care) (4 questions), knowledge about maintaining oral health (4 questions). **Scoring system**: The participant elderly were classified into a group with satisfied knowledge (score ≥ 60%) and group with unsatisfied knowledge (score <60%) **(Mohsen et al., 2017).**

Tool III: To assess elderly reported practice, it includes two parts:

(Part I): To assess elderly reported practice about tooth brushing and flossing. It includes 9 items. **Scoring system**: The participants elderly were classified into a group with (adequate practice = score ≥ 60% and inadequate practice = score <60%) **(Mohsen et al., 2017).**

(Part II)

To assess reported practice about general oral health care among elderly. It include **WHO oral health questionnaire, 2013**.It includes 6 questions (times of cleaning teeth, method of cleaning teeth, the last dentist visit, the reason for this visits, problems that results from your mouth state and diet habits and eating of different nutrient) **Scoring system**: all questionnaire questions were summed-up and converted into percent score. Then classified into 3 groups (poor care = score <50%, fair care =score 50-70%, and good care= score >70%) **(Alhoufy, 2007).**

(Part III)

The original scale was constructed by **The Kayser-Jones (2005)** Brief Oral Health Status Examination (BOHSE). It used to assess the oral health status examination of elderly. It includes eight items that assess lips, tongue, tissue and gums, saliva, condition of natural teeth, denture (artificial teeth), oral cleanliness and dental pain.

Scoring system: all questionnaire questions ranging from (0, 1, 2) were respectively given to the responses of (healthy, changes and unhealthy). The scores classified into (healthy mouth from 0 : <8) (unhealthy 8 : 16) **(Kayser- Jones et al.,2005).**

Validity and Reliability of study tools: Tools tested for its content validity by group of five experts in Community and Gerontological health nursing. The required modification was done. The reliability was tested by Cronbach's Alpha test to be (0.990) while the validity was (0.995) that demonstrating acceptable result.

Method

I- Administrative design

An official letter approval was obtained from the Dean of Faculty of Nursing at Assiut University to the director of the General Assiut Hospital (El-Shamla) & the General El-Eman Hospital (El-Arbaeen) to obtain the necessary approval to conduct the study. This letter included a permission to collect the necessary data and explain the purpose and nature of the study.

II- Pilot study

Before performing the main study, a pilot study was carried out on 10% patients attended to dental out-patient clinics to test the clarity of the questionnaire and to do the necessary modification. Also to estimate the time needed. Those who shared in the pilot study were not included in the study sample.

III- Ethical Consideration

Research proposal was approved from ethical committee in the faculty of nursing. There was no risk for study subject during applicatio

IV- Field work

The researchers met the elderly, explained the purpose of the study, and asked for participation. They started a face to face individual interview with elderly, completed the sheets for all persons. The study started from beginning of September 2016 to the end of August 2017. The assessment was done on all study sample (1300) elderly participants; the data was collected 3 days/ week. The researchers met the elderly in the waiting area of the dental clinics. The length of each 15 to 20 minutes). The average number of elderly which interviewed to fill the questionnaire was 9-10 cases per day, 27-30 cases per week, and 108-120 elderly\month.

V- Statistical analysis

The data obtained were reviewed, prepared for computer entry, coded, analyzed and tabulated. Descriptive statistics (percentages, mean and standard deviation) were done using computer program SPSS version20, Excel 2010. Chi-square, and t-test used to compare categorical variables and differences in the distribution of frequencies among different groups. It was considered significant when P-value were less than 0.05. The researcher use Phi and Cramer's V for nominal data, but gamma for ordinal data, if chi square cannot use

Result

Table (1): Distribution of the studied elderly according to their some personal characteristics at Assiut city, 2017 N=1300.

Some socio-demographic data	N=1300	
	No.	%
Age		
60- <70 years	1012	77.8
70- <80 years	280	21.5
80 and more years	8	0.7
Range	60-85	
Mean + SD	67.21 + 4.55	
Gender		
Male	714	54.9
Female	586	45.1
Residence		
Rural	990	76.2
Urban	310	23.8
Marital status		
Married	908	69.8
Divorced	70	5.4
Widowed	316	24.3
Single	6	0.5
Education level		
Not educated	1105	85.0
Educated	195	15.0
Occupation		
Worked	148	11.4
Not worked	1152	88.6

Table (2): Distribution of the studied elderly according to their present history of oral problems at Assiut city, 2017. N=1300.

Present history of oral problems	No= 1300	%
Number of natural teeth		
No natural teeth	63	4.8
1-9 tooth	621	47.8
10-19 tooth	616	47.4
Pain and discomfort in the last 12 month		
Yes	1273	97.9
No	27	2.1
Do you had denture		
Yes	189	14.5
No	1111	85.5
Gum state description ¥		
Good	4	0.3
Moderate	140	10.8
Bad	1156	88.9
Teeth state description ¥		
Good	15	1.2
Moderate	211	16.2
Bad	1074	82.6

¥ As their orders

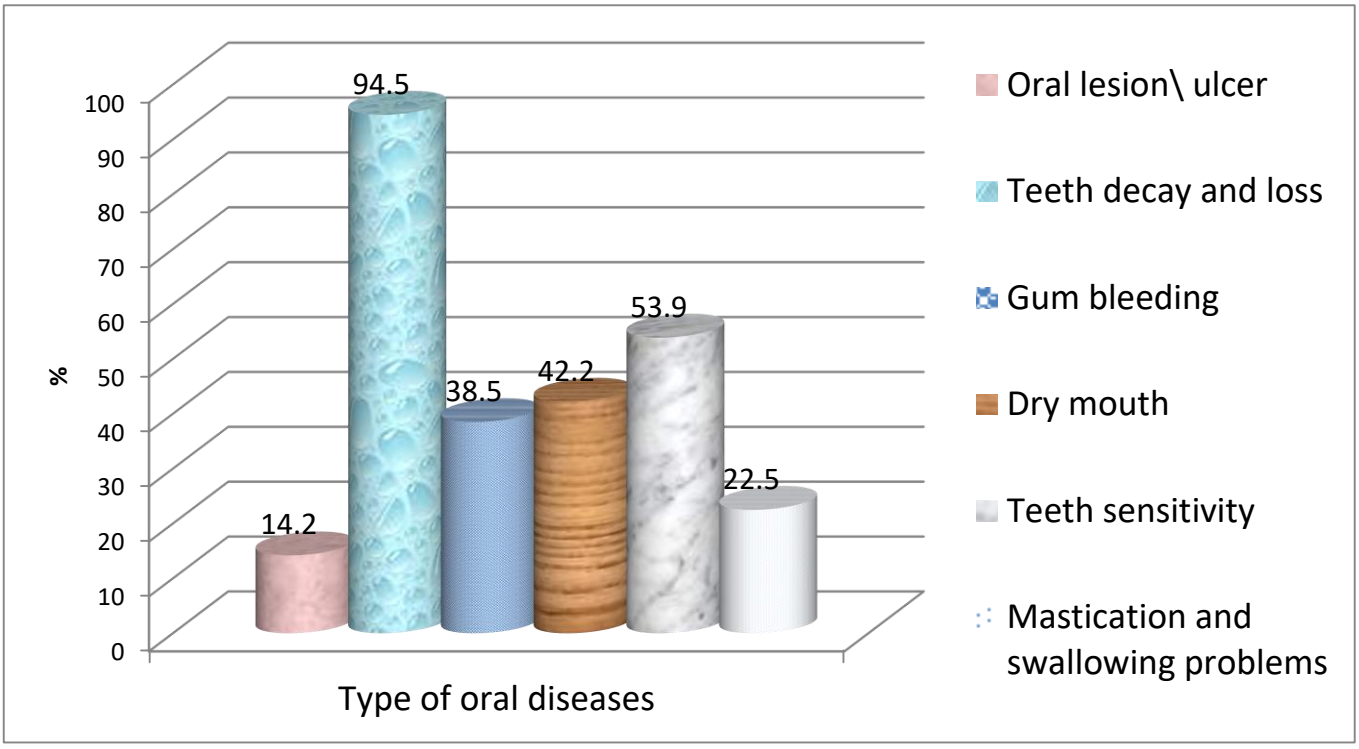

Figure (1): Distribution of the studied elderly according to types of oral diseases at Assiut city, 2017. N=1300.

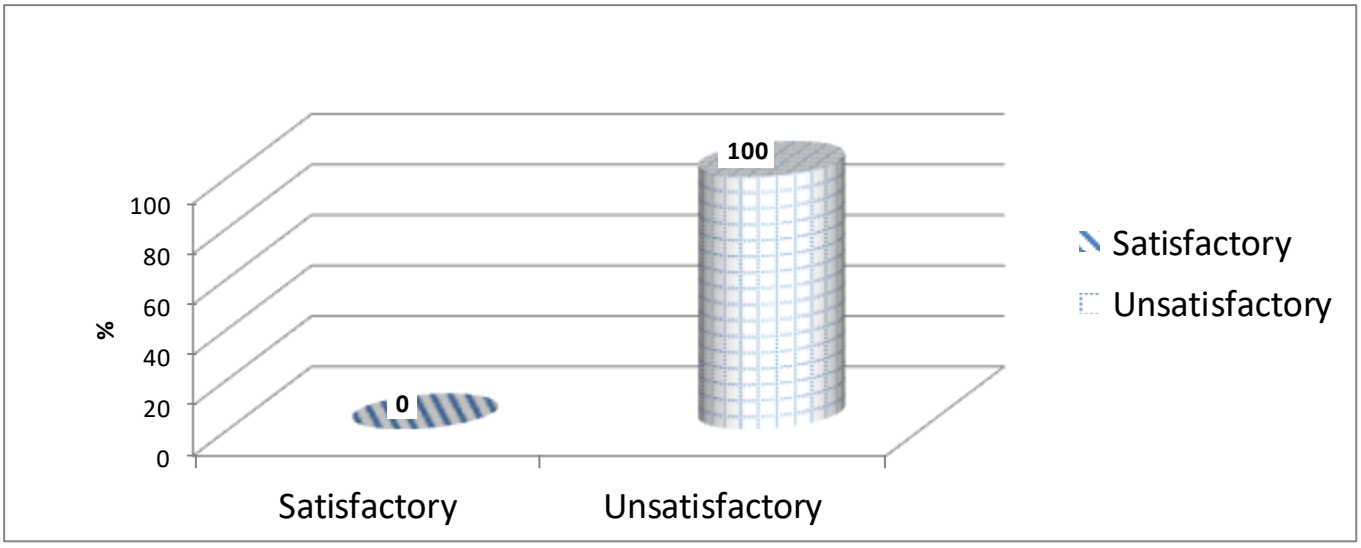

Figure (2): Distribution of the studied elderly according to their total score of knowledge at Assiut city, 2017. N=1300

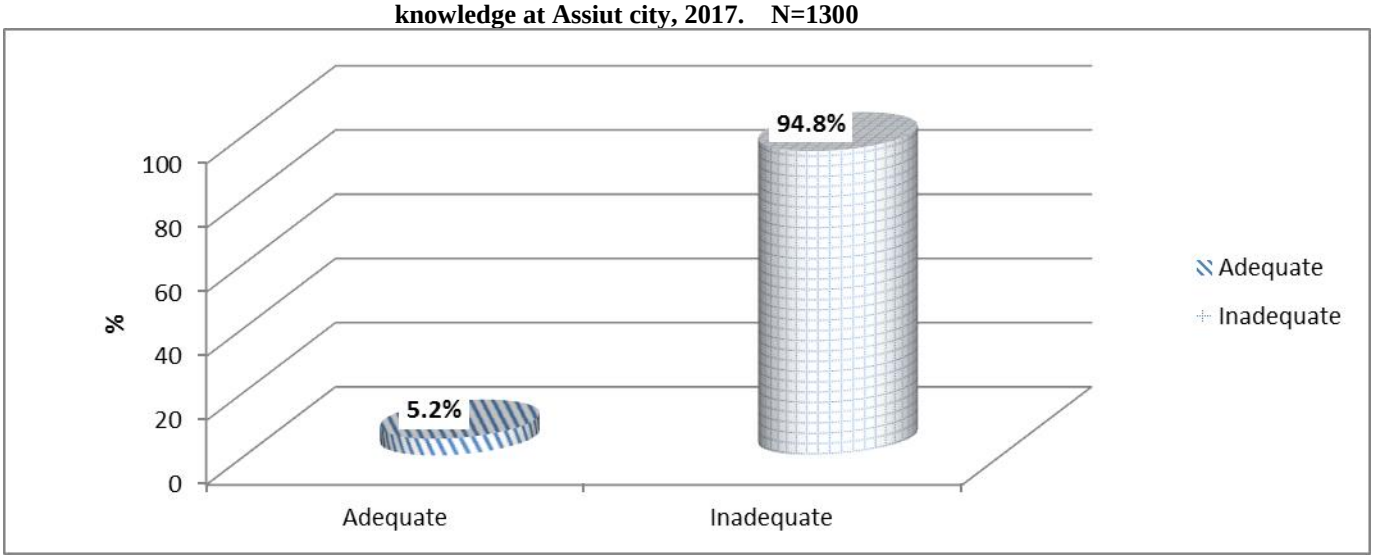

Figure (3): Distribution of the studied elderly according to their total score of reported practice about tooth brushing and flossing at Assiut city, 2017. N=1300.

Table (3): Distribution of elderly according to their reported practice about general oral health care at Assiut city 2017. N=1300.

General oral health care	N=1300.	%
Number of times clean your teeth		
Never	463	35.6
Once/month	98	7.5
2-3 times/ month	278	21.4
Once/ week	176	13.5
2-6 times/week	193	14.8
Once/day	64	4.9
Twice or more/day	28	2.3
Method used for cleaning teeth#		
Tooth brush	356	27.4
Wooden stick	370	28.5

General oral health care	N=1300.	%
Plastic stick	161	12.4
Dental floss	8	0.6
Meswak	151	11.6
Others	65	5.0
Nothing	494	38.0
Using tooth paste for cleaning teeth		
Yes	325	25.0
No	975	75.0
If yes, Using toothpaste contains fluoride.		
Yes	35	10.5
No	290	89.5
The last dental visit		
Less than 6 month	293	22.5
6-12 month	358	27.5
1-2 years	436	33.5
2-5 years	162	12.6
Never have dental care	51	3.9
Reason of last dental visit #		
Advice	51	3.9
Pain and problem of tooth	667	51.3
Medication and follow-up	369	28.4
Routine checkup	58	4.5
Don't know or remember	225	17.3

 # More than one answer

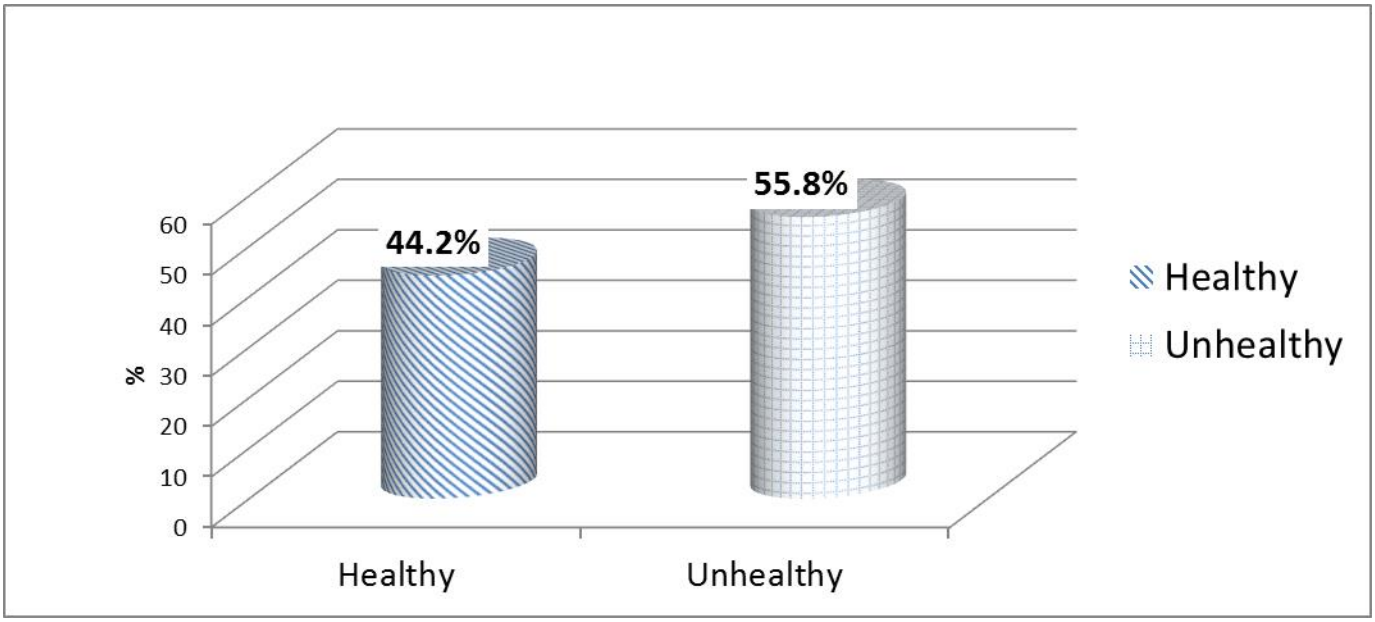

Figure (4): Distribution of the studied elderly according to total score of oral health status examination at Assiut city, 2017. N=1300.

Table (4): The relation between the studied elderly's some socio-demographic characteristics and total score of reported practice about tooth brushing and flossing at Assiut city, 2017. N=1300.

Socio - demographic characteristic	Total score of reported practice about tooth brushing				Test of significance	P. value
	Adequate N=1300		Inadequate N=1300			
	No.	%	No.	%		
Gender						
Male	54	79.4	660	53.6	Chi	<0.001**
Female	14	20.6	572	46.4		
Residence						
Rural	14	20.6	976	79.2	Phi & Cramer's V	<0.001**
Urban	54	79.4	256	20.8		
Marital status						
Married	64	94.1	844	68.5	Gamma	<0.001**
Divorced	4	5.9	66	5.4		
Widowed	0	0.0	316	25.6		
Single	0	0.0	6	0.5		
Education level						
Not educated	0	0.0	1105	89.7	Gamma	<0.001**
Educated	68	100.0	127	10.3		
Occupation						
Not worked	64	94.1	1093	88.7	Phi & Cramer's V	<0.001**
Worked	4	5.9	139	11.3		

(*) there is statistical significant difference
(**) there is highly statistical significant difference
(N.S) there is no statistical significant difference

Table(5):The relation between some socio-demographic characteristics of the studied elderly's and total score of brief oral health status examinations at Assiut city, 2017. N=1300.

Socio - demographic characteristics	Total oral health status examination N=1300				Test of significance	P. value
	Healthy= 575		Unhealthy= 725			
	No	%	No	%		
Gender						
Male	319	55.5	395	54.5	Chi	0.720 N.S
Female	256	44.5	330	45.5		
Residence						
Rural	343	59.7	647	89.2	Chi	<0.001**
Urban	232	40.3	78	10.8		
Marital status						
Married	462	80.3	446	61.5	Chi	<0.001**
Divorced	26	4.5	44	6.1		
Widowed	87	15.1	229	31.6		
Single	0	0.0	6	0.8		
Education level						
Not educated	435	75.7	670	92.4	Chi	<0.001**
Educated	140	24.3	55	7.6		
Occupation						
Not worked	498	86.6	659	90.9	Chi	<0.001**
Worked	77	13.4	66	9.1		

(*) there is statistical significant difference
(**) there is highly statistical significant difference
(N.S) there is no statistical significant difference.

Table (1): Cleared that 77.8% of the studied sample aged 60-70 years. The mean age was 67.21 + 4.55, (54.9%) of the studied sample were male, (76.2%) of the studied sample were from rural areas, (69.8%) of them were married and (85%) were not educated.

Table (2): Showed that 47.8% of the studied elderly had 1-9 natural teeth, 97.7% of elderly suffer from pain and discomfort in the last 12 months and 14.5% of them had denture

Figure (1): Exhibited that 94.5% of the studied elderly had tooth decay &loss, 53.9 % of them had tooth sensitivity, 38.5% had gum diseases, and 42.2% had dry mouth

Figure (2): Illustrated that 100.0% of the studied elderly have unsatisfactory knowledge

Figure (3): Showed that 94.8% of the studied elderly had inadequate reported practi**ce** about tooth brushing

Table (3): Revealed that 35.6% of the studied elderly never clean their teeth while only 4.9% and 2.3% of them clean their tooth once and twice per day respectively. This table also exhibited that 33.5% of the studied elderly last dental visit was since 1-2 years and only 4.5% of them last dental visit was due to routine checkup.

Figure (4): Showed that 55.8% of the studied elderly had unhealthy oral state and 44.2% of them had healthy oral state.

Table (4): Showed that there was statistical significant difference between socio-demographic data of participants elderly and total score of reported practice about tooth brushing.

Table (5): Cleared that there was statistical significant difference between and total score of brief oral health status examination of participants elderly and socio-demographic data

Discussion

The mouth reflects a person's health and wellbeing throughout life. Oral disease can have an impact on many aspects of general health and health conditions can intern have an impact on oral health. Oral health is an essential part of daily living. Poor oral health is closely linked to economic deprivation, social exclusion and cultural difference. Emerging evidence has showed a strong link between the effects of oral disease and general health. The mouth is the gateway to the rest of the body. Oral disease is associated with systemic disease as cardiovascular disease, stroke, respiratory infections, diabetes and nutritional problems **(Mohsen et al., 2017)**

According the level of education, the results of the current study revealed that the majority of the studied elderly were not educated and less than one fifth of them were educated. These results are supported by **Rodrigues et al., (2017)** who found that slightly less than three quarters of the studied elderly had never studied. In contrast, these results disagree with **Hernández-Palacios et al., (2015), & Mohsen et al., (2017)** who stated that more than half of the elderly could read and write respectively.

Regarding current occupation, the result of the present study showed that slightly more than one tenth of the studied elderly were worked, while the majority of them were not worked. This may be attributed to decrease the capacity to work because of multiple chronic diseases among elderly and the lack of job opportunities for elderly. These results are in agreement with **Mohsen et al., (2017)** who stated that more than three quarters of the studied elderly did not work, while these findings disagree with **Masood et al., (2017)** who reported that only one tenth of the studied elderly were not working.

According history of oral and dental problems, the results of the present study revealed that one hundred percent of the studied elderly had oral and dental problems. This may be due to many accumulated risk factors of oral and dental problems among elderly as aging changes, unhealthy diet, lack of mouth wash\oral care and absence of periodic dental checkup. The highest ranked oral and dental problems were tooth loss & dental caries, tooth sensitivity, dry mouth, and gum diseases. The present results are consistent with **Porter et al., (2015)** who stated that one hundred percent of the studied elderly had oral and dental problems. The highest ranked oral and dental problems were dry mouth, broken teeth, tooth sensitivity, tooth loss and bleeding.

Concerning teeth and gum status; the results of the present study revealed that the majority of the studied elderly describe their gum status and their teeth status as poor respectively. This may be attributed to elderly neglect seeking oral and dental care in spite of their knowing with bad state of their teeth and gum. These results are in disagreement with **Mahmoud, (2014**) who stated that less than three quarters of males' elderly and the majority of females' elders perceived their oral health status as poor or fair respectively.

As regard total score of knowledge, the results of the current study showed that one hundred percent of the studied elderly had unsatisfactory knowledge. This may be due to high level of illiteracy and lack of oral health education for elderly. These findings agree with **Al-Sharbatti & Sadek, (2014) & Bashiru et al., (2017)** who reported that near two third of the studied elderly had poor oral health knowledge and more than one third had good oral health knowledge.

Regarding the total score of elderly reported practice about tooth brushing and flossing, the results of the present study showed that the majority of the studied elderly had inadequate reported practice. This may be attributed to lack of elderly knowledge about the right technique of oral health care procedures (tooth

brushing & flossing) and lack of regular using of these procedures among elderly. These results are consistent with **Samnieng et al., (2013) & Al-Sharbatti & Sadek, (2014)** who reported that more than two thirds and more than three quarters of the studied elderly had low oral health practice, while less than one third and more than one tenth had high oral health practice respectively.

As regard reported practice about general oral health care of participant elderly, the results of the present study showed that more than one third of the studied elderly never clean their teeth while only little percent clean their tooth once and twice per day respectively. This may be because of absence\lack of awareness of the importance of oral health and its impact on general health. These results are inconsistent with **Michele et al., (2015) & Agrawal et al., (2015)** who stated that three quarters and less than half of the studied elderly had clean teeth once and twice a day respectively.

Concerning the method of cleaning tooth; the results of the present study showed that less than two fifth of the studied elderly use nothing. While more than one quarter of the studied elderly use tooth brush and only (0.6%) use dental floss. This may be attributed to absence of culture of maintaining oral health with regular tooth brushing & flossing among elderly especially in rural areas due to the probability of low financial resources. These results are inconsistent with **Mohsen et al., (2017)** who stated that less than two third of the studied elderly use tooth brush in dental wash.

As regard the last dental visit; it was observed that one third of studied elderly last dental visit was since 1-2 years and more than one quarter of studied elderly last dental visit was since 6-12 months. These results are consistent with **Mohsen et al., (2017)** who stated that more than half of participant elderly last visit since more than 1 year. This result disagree that **Sapuric & Tozaj, (2015)** who reported that the almost two third of the participant elderly visit the dentist regularly.

Regarding the total score of oral health status examination, the results of the present study showed that more than half of the studied elderly had unhealthy oral state and more than two fifth of them had healthy oral state. This may be attributed to the neglect of tooth brushing, tooth flossing and routine dental checkup among elderly. These results are consistent with **Hernández-Palacios et al., (2015)** who stated that more than half of the participant elderly had poor self-perceived oral state, while about more than one quarter and almost one tenth of them had normal and good self-perceived oral state.

Conclusion

Based on the results of the present study. It was concluded that all and the vast majority of the studied elderly had unsatisfactory knowledge about oral health and inadequate practice about tooth brushing respectively. In addition, there was significant relationship between the socio-demographic data of the studied elderly and reported practice about tooth brushing..

Recommendations

Based on the results of the present study, the following recommendations were suggested:

1. Giving health education program in the dental outpatient clinics about oral health to improve knowledge and practice of the elderly people.
2. Establishing routine dental checkup for elderly in all health care facilities.

References

1. **Abd–Allah, E., Mohammed, R., Abo El-seoud, A., (2018):** Educational program to improve quality of life among elderly regarding oral health, Zagazig City, Sharqia Governorate, Egypt. Future Dental Journal. available at:-E-mail addresses: emanshokry2012@yahoo.com and journal homepage: www.elsevier.com/locate/fdj https://doi.org/10.1016/j.fdj.2018.07.002
2. **Abdul Razak, P., Richard, J., Thankachan, R., Abdul Hafiz, K., Kumar, K., & Sameer, K., (2014):** Geriatric Oral Health: a review article. Journal of International Oral Health 2014; Vol.6, No.(6), PP;110-116.
3. **Agrawal, R., Gautam, N., Kumar, P., Kadhiresan, R., Saxena, V., & Jain, S., (2015):** Assessment of Dental Caries and Periodontal Disease Status among Elderly Residing in Old Age Homes of Madhya Pradesh, Journal of International Oral Health 2015, Vol.7, No.(8): PP; 57-64.
4. **Al Houfy, A., (2007):** Knowledge and Practices of Dental Health Care Providers toward Cross-infection Control Measures at Assiut City, Thesis Master, Faculty of Nursing, Assiut University.
5. **Al-Sharbatti S., & Sadek, M., (2014):** Oral Health Knowledge, Attitudes & Practices of the elderly in Ajman, UAE Proceedings of the 6th Annual Scientific Meeting of Gulf Medical University; Vol. 3, No.(S2): PP; 152-164.
6. **Alves, D., Leite, Y., Carneiro, T., Lins, R., Patrícia, C., & Costa. K., (2016);** Oral Health Conditions and Activities of Daily living in an Elderly Population in Brazil, vol.19, No.(6): PP; 917-929. Available at:- E-mail: vianealves@yahoo.com.br.

7. **Bashiru, B., Ernest, A., & Johnson O., (2017):** Gender and Age related Disparity in Oral Health Knowledge, Attitude and Practice among Elderly Pensioners in Port Harcourt, Rivers State, Centaral African Journal of Public Health, 2017; Vol.3 No.(3): PP; 34-39. Available at:- http://www.Sciencepublishing group.com/j/cajpahdoi:
8. **Central Agency for Public Mobilization & Statistics(CAMPS), (2018):** Vital Statistics, available at:- https://www.capmas.gov.eg pdf.
9. **El Helou, M., Christa Boulos, C., Salim M., Adib, B., & Tabbal, N., (2014):** Relationship between Oral Health and Nutritional Status in The Elderly: A Pilot Study in Lebanon, Journal of Clinical Gerontology & Geriatrics, available at: - science direct& journal homepage: www.e-jcgg.com Vol.5 (2014): PP 91-95.
10. **Hernández-Palacios, R., Ramírez-Amador, V., Edgar Carlos Jarillo-Soto, E.C., Irigoyen-Camacho, M., & Mendoza-Núñez, V., (2015):** Relationship Between Gender, Income, and Education and Self-Perceived Oral Health among Elderly Mexicans. An Exploratory Study. Ciencia & Saude Coletiva, Vol.20, NO. (4); PP; 997-1004, 2015.
11. **Kayser-Jones, J., Bird, W., Paul, S., Long, L., & Schell, E., (2005):** An Instrument to Assess the Oral Health Status of Nursing Home Residents. The Gerontologist, Vol.35, No.(6). PP; 814-824.
12. **Mahmoud, R., (2014):** Oral Health Status of Elderly Living in Residential Homes at Damanhour City, Egypt. Community Health Nursing, Faculty of Nursing, Damanhour University. Available at:- ASNJ<asnj.alexu.edu.eg.
13. **Masood, M., Newtonc, T., Bakrib, N., Khalidd,T., & Masood Y., (2017);** The Relationship between Oral Health and Oral Health Related Quality of Life among Elderly People in United Kingdom, Journal of Dentistry. Vol. 56, PP; 78-83. Available At:- Science Direct And Journal Homepage. WWW.Intl. Elsevierhealth.Com/Journals/Jden.
14. **Michele, L., Michael, A., Hubert, N., Florence, D., & Jacques, B., (2015):** Oral Health Status of Elderly at Tonga West region, Camertoon. Hindawi publishing corporation, International Journal of Dentistry, V. 2015, PP; 1-9. Available at:- https://www.hindawi.com.
15. **Mohsen, M., Abd EL Megeed, H., Elsayed, D., & Abd El-Rhaman M., (2017):** Quality of Dental Care among Elderly in Benha city, Journal of Nursing and Health Science, Vol. 6, No. (4): PP; 64-76. Available at:- www.iosrjournals.org.
16. **Pandey, A., Pandey, M., Siddique, S., Malik, S., & Alam, M., (2014):** Gerodontics: A Boon for the Oral Health of Geriatric Patient, International Medical Journal Vol. 21, No. (3), PP; 328 – 330.
17. **Porter, J., Ntouva, A., Read, A., Murdoch, M., Dennis O., & Tsakos, G., (2015):** The Impact of Oral Health on the Quality of Life of Nursing Home Residents. Health and Quality of Life Outcomes (2015) Vol.13, No.(102): PP; 2 of 8.
18. **Reigle, J., & Holm, K., (2016):** Knowledge of Oral Health of Nursing Staff Caring for Disadvantaged Older People, Journal of Nursing Education and Practice 2016, Vol. 6, No. (1): P.P 31- 38. Available at:- www.sciedu.ca/jnep DOI: 10.5430/jnep.v6n1p31 URL: http://dx.doi.org/10.5430/jnep.
19. **Rodrigues, C., Falcão, L., Nuto, S., Saintrain, M., & Fernandes, A., (2017):** Self-Perceived Oral Health among Elderly: A Household –Based Study. Vol. 20 No.(1); P.P; 07-19 Correspondence Sharmênia de Araújo Soares Nuto. E-mail: shanuto@gmail.com www.scielo.br
20. **Samnieng, P., Ueno, M., Zaitsu, T., Shinada, K., Wright F., & Kawaguchi, Y., (2013):** The Relationship between Seven Health Practices and Oral Health Status in Community-Dwelling Elderly Thai, Published by John Wiley & Sons Ltd, Gerodontology 2013; Vol. 30, No.(4): PP; 254–261. Available at:- https:// www.ncbi.nlm.nih.gov
21. **Sapuric M., & Tozaja, F., (2015):** Assessment of Knowledge and Attitudes to Preserve Oral Health among Older People Aged 60+ in Fyrom, Institute of Public Health, Faculty of Medicine, Skopje, Fyrom. Balkan Journal of Dental Medicine, Vol. 19, 2015, P.P; 26-33. Available at:- https:// www.researchgate.net.
22. **World Health Organization (WHO), (2013):** Oral health assessment, Oral health surveys: Basic Methods - 5th edition, **Number of pages**: 125, **ISBN**: 978 92 4 154864 9 available at: http://www.who.int/oral_health/publications/9789 241548649/en/
23. **World Health Organization** (**WHO), (2015):** Regional Office of Eastern Mediterian, Egypt releases results of epidemiological study on oral health status. Available at:- http://www.emro.who.int/egy/egypt-events/results-of epidemiological-study-on-oral-health-status-released.html