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Oral Health Assessment among Elderly Staying in Shelter (Rumah Seri Kenangan), Kelantan, Malaysia

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Abstract : *Increasing in elderly population was well reported in many studies and also global census including in Malaysia. Oral diseases are cumulative disease and age related throughout life. The complexity of the disease and their management needs urgent attention. These crosses sectional study was conducted in institutional community of old folk shelter in Kelantan, Malaysia. The general condition of oral health was assessed to identify the oral health problems and to determine the normative needs of the occupant. Result shows that there is a high need in tooth extraction and also denture. Due to changes in all physiological body components and use of medication for other systemic diseases, management of oral disease among elderly needs multi-sectorial approach including government as a prime mover, tertiary education provider, health care marketer and also community where the elderly leaves.*

Keywords: *action plan, elderly, institutionalized, unmet needs, oral health status*

I. INTRODUCTION

Aging is universal phenomenon occurring to every living thing, including man. Denham Harman, has defined aging as "the progressive accumulation of changes with time associated with the ever-increasing susceptibility to disease and death which accompanies advancing age[1]. Aging is a summary term for a set of processes, which contribute to health deterioration and ultimately to death with the passage of time (calendar age). It is a process, which contributes to age-related decline in performance and productivity while health, is a component of the aging process that deserves our attention and intervention.

In 2006, it was reported that nearly 500 million people worldwide were 65 or older. By 2030, the total number was projected to increase to 1 billion which is one in every eight people on the planet. The elderly population in Malaysia is projected to increase from 6.4% in the year 2000 to 7.0% in the year 2005, and subsequently to 12.0% in the year 2020[2]. According to 2000 National Malaysian census 2000, average proportion people age above 65 years was 3.9%, increasing from 3.7% (1991). Increasing in median age from 21.9 (1991) to 23.6 (2000) shows there is shifting trend in Malaysia toward aging population [3].

1.1 Categories of the Elderly

There are several ways to categorize elderly. They can be described by chronological age, but the older population shows great diversity. Ettinger and Beck (1984) developed a functional definition of the elderly based upon an older person's physical ability[4]. The categorization that they developed is threefold, they are the:

1.1.1 Functionally-Independent Elderly:

Are healthy, active and live in the community unassisted. They make up about 70% of the elderly population. Usually they are able to get to the health care.

1.1.2 Frail Elderly:

Those who have lost some of their independence live in the community but need the companionship of others (20%). These are persons with chronic conditions that create major limitations in mobility.

1.1.3 Functionally-Dependent Elderly:

Those, who are unable to live independently, they are either home-bound (5%) or institutionalized (5%) [5].

Both the frail and the functionally-dependent elderly normally have chronic debilitating physical, medical and emotional problems. Their management and treatment require special skills.

In Malaysia, a lot of nursing homes were built to looks after the elderly especially for those without relative and poor. This institution was run by both non-government organization and government agency. Rumah Seri Kenangan (RSK) was government aids institution for elderly under Department of Social Welfare. Until 2006, there is nine RSK across this country with total inhabitant was 1953. The nine RSK were located in Bedong, Cheras, Pengkalan Chepa, Johor Bharu, Kangar, Seremban, Taiping and Tanjung Rambutan[6].

1.2 Oral health importance of the elderly

Oral diseases are cumulative and become more complex over time. The older adult population has high rates of oral diseases, exacerbated by the fact that many elderly adults are poor especially those in institutions. They have limited access to dental services especially for the frail and functionally dependent elderly.

Oral disease has a significant impact on general health. The oral cavity can be a portal of entry for microbial infections that affect the whole body. Oral diseases give rise to pathogens, which can be blood borne[7] or aspirated into the lungs[8], bringing about severe, and even life-threatening consequences. Recent research findings have pointed to possible associations between chronic oral infections and diabetes, heart and lung disease, and stroke.

Oral problems also have a negative effect on quality of life. Oral-facial pain and tooth loss can greatly restrict major oral and social functions. Problems with the teeth and mouth can affect the ability to eat and communicate. Individuals with facial disfigurements due to oral diseases can experience loss of self-esteem, anxiety, depression, and social stigma. Diet, nutrition, sleep, psychological status, and social interaction are all affected by impaired oral health.

II. OBJECTIVE, MATERIAL AND METHOD

The objective of the current study was to assess the dental status and needs among elderly in RSK Pengkalan Chepa, Kelantan, Malaysia.

2.1 Material and method

This is cross sectional study conducted in RSK Pengkalan Chepa. All occupants were selected except those with mental illness. A total of 56 respondents participated in this study.

2.2 Data collection

Interview questionnaire was used to assess the socio-demographic characteristic. Intraoral examination was done by single calibrated examiner in mobile dental unit and for those unable to walk/bed ridden, headlight and disposable probe and mirror was used. Caries experience was measure as Decay (D), Missing (M) and Filled (F) tooth. Other variable was assessing through intraoral examination and by asking the respondents and caregivers. All data was clean and analyze using SPSS (SPSS Inc. Chicago, 2003).

III. RESULTS

Table 1: Descriptive characteristics (n=56)

Variables	mean (SD)	frequency (%)
Age	71.2 (8.38)	
Male (n=36)	71.8 (8.05)	
Female (n=20)	70.0 (9.04)	
Sex		
Male		36 (64.3)
Female		20 (35.7)
Race		
Malay		44 (78.6)
Chinese		6 (10.7)
Indian		5 (8.9)
Misc.		1 (1.8)
Bed ridden		
Yes		36 (64.3)
No		20 (35.7)
DMFT	29.6 (5.84)	
Decay	1.9 (3.92)	
Missing tooth	27.6 (7.16)	

Filled tooth	0.04 (0.187)
Needs for extraction	
Yes	25 (44.6)
No	31 (55.4)
Edentulous	
Yes	34 (60.7)
At least 1 teeth	22 (39.3)
Wearing denture	
Yes	3 (5.4)
No	53 (94.6)
Needs denture	
Yes	51 (91.1)
No	5 (8.9)
Oral hygiene status	
Satisfactory	17 (30.4)
Poor	39 (69.6)

A total number of 56 occupants were eligible for examination during this visit. The rest of them were warded in isolated building due to mental illness. From the total number of 56 respondents, mean (SD) age was 71.2 (8.38) with male was slightly older (71.8) then female (70.0), but the difference was not significant (p=0.445). Most of senior in this institution was male (64.3%) and majority of them was Malay (78.6%). All of them had at least one systemic disease with high blood pressure and diabetes was the prominent one, and 64.3% of them were bed ridden. There is no different in association between gender and bed ridden, with they are equally distributed (p=0.067).

Majority of the respondents were found to be edentulous (60.7%). Mean (SD) DMF(T) for this group were 29.6(5.84) with mean for decay tooth was 1.9 (3.92), filled tooth was 0.04 (0.19) and mean for missing tooth was 27.6 (7.16). We also observed that 69.6% of respondents have poor oral hygiene. From Table 1, 44.6% of respondents in this institution needs tooth extraction, while only 5.4% wearing prosthesis. Majority of them (91.1 %) needs for denture construction. Among bed ridden seniors, 97.2% of them needs denture and 47.2% of them needs tooth extraction prior to denture construction.

IV. DISCUSSION

Result from this study shows that majority of occupants staying in this institution was male. This situation can be seen in all Rumah Seri Kenangan throughout Malaysia[6], where male out number female. This scenario was very subjective to explain and can be due to female was healthier and can live independent than male[9]. However this study also show that there is no significant different in bed ridden between gender.

Caries experiences were high among respondents in this institution. Since the DMFT index that we used was life time cumulative index, the result was as expected to be. The same finding was also had been reported in other studies [9, 10]. The association between age and caries experiance was linear relationship where increased in age will increase DMFT score proportionately[9, 10]. However, comparing with Seman K(2007)[9] and NOHSA 2000[10], the mean DMFT in this study was higher. The differences can be due to nature of sampling sources in which from this study, the respondents was mainly those with low socio-economic, low education level, without any other incomes and majority of them are having medical illness. According to Helgeson et al (2002)[11], the living arrangements of older adults are closely linked to income, health status, and the availability of caregivers. Older persons who live alone are more likely to be in poverty and experience health problems, compared with older persons who live with a spouse or a relative. This factor was further supported by the criteria used by RSK as a prerequisite prior to entering these shelters.

The prevalence of edentulous in this study was found to be very high when compared to other studies[9, 10, 12, and 13,14,15,16]. However the trend was similar with other study showing that the prevalence of edentulism will increased with age while for the dentate, the proportion will decreased with increasing in age[10, 17]. From this study also, we found that none of the respondents have 20 functional teeth. High DMFT value in this study was mainly contributed by the missing (M) component. The high missing components can be due to lack of oral hygiene knowledge, lifestyle and culture influence such as type of food consumed. Furthermore, in the early 1960's and 1970's, due to constrained resource, the main task of dental professionals was to provide basic first aid and outpatient curative services for instance, tooth extraction. Missing tooth can greatly reduce the quality of life and restrict major oral functions, affecting ability to eat and communicate. Thus influencing diet, nutrition, sleep, psychological status, and social interaction are all affected by impaired oral health[11].

The mean (SD) filled tooth components in this study were almost none 0.04 (0.187). This situation could be due to either no restoration was done in the earlier days, or the restorations did not last. In the early post-independence years, people had little or no access to health care facilities in Malaysia. Thus, in the absence of qualified dental practitioners, the public had no alternative except for tooth extraction.

Result from this study also shows that oral hygiene was almost neglected. The same finding can also been seen in other studies[18, 19]. Berkey, Berg, Ettinger and Meskin (1991) reported that up to 70% of institutionized residents in USA had unmet oral needs, exhibiting high rates of edentulism (complete tooth loss), dental caries (decay), poor oral hygiene, periodontal disease, and oral mucosa lesions[18]. Insufficient man power in institution house and lack of knowledge the importance of maintaining good oral hygiene in elderly among caregiver themselves, was among the factors that contributed to the problems.

Oral hygiene also associated with underlying health condition. The present of systemic diseases such as hypertension and diabetes, further complicating the condition and needs special attention from trained healthcare provider. Systemic diseases may directly or indirectly harm the oral cavity by altering saliva flow, which plays an essential protective role in the mouth[20]. On top of that, a major impact of systemic diseases on the oral health of elderly is caused by the side effects of medications taken[11]. According to Helgeson et al (2002), with increasing in age and associated chronic disease, the elderly are prescribed an ever-expanding variety of medications. Besides the desired therapeutic outcome, adverse side effects of medications can also alter the integrity of the oral mucosa. Among reported adverse effect of medicatons used are xerostomia (dry mouth), bleeding disorders of the tissues, lichenoid reactions (oral tissue changes), tissue overgrowth, and hypersensitivity reactions[21].

Pain and discomfort can lead to diminishes quality of life. In elderly, tooth ache can reduce their daily activity and social function. Caries (roots and crown) can cause pain and discomfort. From this study, we found that 44.6% of them need tooth extraction to relief their pain and discomfort and also prior for denture construction. Healthy life needs balance food intake. Among edentulous elderly, it was necessary to construct good denture to restore their eating function. However, result from table 1 shows that 91.1% of the elderly have no denture. Majority of them (68.6%) was bed ridden elderly. The high proportion of elderly needing denture to restore their eating function mirrored the high unmet needs among elderly in this country.

V. CONCLUSION AND RECOMMENDATIONS

5.1 Conclusions

From this study, it was concluded that elderly in this institution has poor oral hygiene, with majority of them needs denture to restore their eating function but most of them were bed ridden which needs special management skills.

5.2 Recommendations

The dental treatment needs of the elderly differ from those of younger adults, and newer cohorts of elderly have significantly different needs than older cohorts[11]. The comprehensive guideline in tackling the oral health needs of the elderly by Oral Health Department, Malaysia Ministry of Health was warmly welcome. However, most of the issue was focusing in the needs of elderly in structured community, but lack in depth for elderly in institution. To fulfill the increasing needs of oral health among the elderly required multisectorial approach. It involving the government in providing the foundation such as policy and prime mover, the university providing the expertise and soft skill aspect, health care market player in providing the technologies and most importantly was the community where the elderly leave and socialized.

5.2.1 Government Role

5.2.1.1 Oral Health Policy

Providing a clear policy in government effort to improve quality of life for the elderly through good oral health will initiate multiple responses by other stake holder to play their role effectively. Evidence based policy will set the direction, therefore making inter-sectorial collaboration working more effectively. Moreover, strengthened analysis for policy and analysis of policy are urgently needed for advocacy, legislation, goalsetting, and design of public oral health programmes for old-age persons.

5.2.1.2 Oral Healthcare Services

Accessibility and availability of oral health care services was the main determinants in achieving good oral health for the elderly. Since government provided healthcare was the major services for elderly in this country, therefore it is necessary to reorient these services towards prevention and to deliver the appropriate care to meet the diversified needs of the large and growing heterogeneous older population. Oral health systems should effectively address factors that prevent or hinder the older population's access to and use of appropriate services. This can be achieve by providing services close to their home such as outreach programme,

subsidizing their treatment cost, upgrade infrastructure suitable for them, and on top of that is overcome the shortage dental manpower in the field.

5.2.1.3 Human Capacity Building/ Training for Services and Care

The lack of appropriate access to oral health care is compounded by a shortage of skilled geriatric oral health care specialist. Elderly institutionalised patients often have a higher prevalence of oral diseases than those living at home. There is, hence, a great need for dental practitioner and nursing staff to be specially trained in caring for the mouth and improving oral hygiene of the elderly residents. Healthcare personal that directly involve in giving services to elderly should be equipped with necessary knowledge and technologies. The focus of direct care staff education should be to provide an understanding of the importance of oral health, assessing oral health, the medical complications that result from poor hygiene, quality of life implications of poor oral health, methods to provide oral hygiene, available equipment, tools and their use and methods to deal with resistance during oral care. All this components together with communication skill should be taught to those assign in providing services to elderly.

5.2.1.4 Recognizing the Geriodontology Specialty

Each time pass by, the elderly become more and more retained their tooth in later life. However, since dental diseases is a life time accumulation, the pattern and severity was differ from other age group due to their underlying health condition. Therefore, dental specialty was needed to look after their problems and needs.

5.2.2 Universities and higher learning education centre

Training on geriatric oral health should be incorporate at the predoctoral level within dental and dental nurse curriculum. Dental school educators should implement more geriatric didactic courses, clinical rotations, and faculty with geriatric dental training. The goal was to produce competent dental health practitioners in treating geriatric patients with a culmination of a lifetime of dental disease, more complex medical histories, the increased likelihood of multiple, interacting medications, and increased functional limitations.

The number of formal advanced education opportunities in geriatric dentistry is very limited. Dental school should take initiative in providing a postgraduate course on geriatric dentistry to fill the needs of manpower in health care services.

Other alternative in fulfilling these needs is through dental continuing education. These short cut alternatives should be explore and utilized thoroughly.

Sixties year-olds and over are growing in number, resulting in a change in the population structure. In addition, overall rates of disability among the elderly rise steeply in those over 70 years of age, with the most severely disabled living mainly in institutional care.

Thus, nurses and other health care workers play a significant role in the provision of oral care for the dependent elderly. However, in the nursing curricula presently, there is a lack of training on the oral health and oral diseases of the elderly at both undergraduate and postgraduate levels. Hence, a comprehensive oral health educational programme should be provided for nurses and carers of institutionalised elderly residents. It is a time for universities to expand their scope in teaching programmes for this particular group.

5.2.3 Healthcare Marketer

Industries should become more innovative in producing oral health goods and technologies tailored to elderly needs, since the market become bigger then ever. Suitable technologies in oral care for elderly will help them maintained their oral health condition, and at the same time will help in promoting oral health campaign.

5.2.4 Community Participation

The core of promoting good oral health and preventing oral disease in elderly is by participation of the community since the elderly was lived and socialized among them. Direct caregiver should play important role in maintaining the oral health of the elderly. They can be the close relative or social worker and also the one that was paid by government especially in this Rumah Seri Kembangan Institution. Therefore, they should be provided with knowledge and support.

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