

ORIGINAL ARTICLE

Dental Students' Knowledge and Perception of Elderly in Relation to Geriatric Dentistry Training

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ABSTRAK

Pelajar pergigian perlu dilengkapi dengan kemahiran, ilmu pengetahuan serta sikap positif semasa memberi penjagaan pergigian kepada wargatua. Laporan daripada Kementerian Kesihatan Malaysia menunjukkan prevalens karies pergigian dan penyakit periodontium di kalangan wargatua negara ini masih tinggi. Tujuan kajian ini adalah untuk mengenalpasti tahap pengetahuan serta persepsi pelajar pergigian tahun akhir terhadap wargatua berkaitan dengan pembelajaran pergigian geriatrik di Universiti Kebangsaan Malaysia (UKM). Semua pelajar pergigian tahun akhir diminta melengkapkan borang soal selidik yang merangkumi 3 bahagian: 1) *Palmore's Facts on Aging Quiz II*, 2) Faktor sosial dan kesihatan mulut pesakit, dan 3) Persepsi terhadap pembelajaran pergigian geriatrik. Sejumlah 83 pelajar telah turut serta dalam kajian ini. Dua puluh empat peratus (n=20) daripada mereka mendapat markah melebihi 70% dalam soalan berkenaan pengetahuan terhadap wargatua, sementara 73% (n=61) mendapat markah di antara 50-70%. Para pelajar telah memilih ketidakupayaan fizikal, masalah pengangkutan dan keutamaan lain yang lebih kompleks sebagai tiga sebab teratas bagi wargatua tidak menepati temujanji rawatan pergigian mereka. Majoriti pelajar melaporkan kekurangan sumber bahan pendidikan dan pendedahan latihan lapangan yang terhad sebagai halangan utama yang dihadapi sepanjang kursus. Sebagai kesimpulan, kebanyakan pelajar mempunyai tahap pengetahuan yang sederhana berkaitan dengan wargatua serta berupaya mengenalpasti isu sosial yang mempengaruhi kesihatan mulut mereka. Secara am, tiada banyak perubahan terhadap persepsi kemahiran pelajar pergigian dalam menguruskan pesakit wargatua selepas menjalani modul pergigian geriatrik di fakulti.

Kata kunci: pergigian geriatrik, pendidikan pergigian, pelajar pergigian, soal selidik

ABSTRACT

Dental students need to be equipped with skills, knowledge and positive attitudes while providing dental care to the elderly. Reports from Ministry of Health Malaysia indicated that the prevalence of dental caries and periodontal disease was high among older people in the country. The aim of this study was to assess the knowledge and

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perception of final year dental students towards the elderly in relation to training of geriatric dentistry in Universiti Kebangsaan Malaysia Medical Centre (UKMMC). All the final year dental students were required to complete a questionnaire that comprised of 3 sections: 1) Palmore's Facts on Aging Quiz II, 2) Oral health and social concerns of patients, and 3) Perception towards the teaching of geriatric dentistry. A total of 83 students participated in the study. Twenty-four per cent (n=20) scored more than 70% to questions on knowledge about older people and 73% (n=61) scored between 50-70%. The students had ranked physical disability, transportation problems and complex and overlapping priorities as reasons for elderly not keeping to their appointments. Majority of the students reported that lack of educational resource materials and very minimum clinical sites experience were the main barriers faced during the course. In conclusion, majority of the students had moderate to good knowledge about older people and were able to recognize issues of social concerns that can influence their oral health. In general, there were not many changes in the perceived competencies of managing older patients following the geriatric module.

Key words: geriatric dentistry, dental education, dental students, questionnaires

INTRODUCTION

The number of elderly people worldwide is growing rapidly. In 2000, there were 600 million people who were aged 60 and over and this number is expected to increase to 1.2 billion by 2025 and 2 billion by 2050, in which 80% are living in developing countries (Mujahid 2006). Data from the United Nations in 2002 showed that based on the 6 billion-world population, 7% of the world's population were 65 years and above, whilst those aged 60 years and above comprised another 10% (United Nations 2002). The elderly population in Malaysia is projected to increase from 6.6% in the year 2000 to 13.4% in 2025. Improved living conditions, better hygiene and advances in medical care have been reported as the reasons for a greater proportion of persons reach old age. However, as the population ages, there is an increased risk of this group developing systemic diseases like hypertension, heart disease, diabetes and chronic obstructive pulmonary diseases (World Health Organization 2003). As for oral health, re-

ports have revealed that the condition of this group is far from optimal. Their treatment needs are high due to edentulism, missing teeth, caries, periodontal diseases and attrition resulting in impaired oral function, affecting quality of life (Petersen & Yamamoto 2005). In Malaysia, report from the National Oral Health Survey of Adults 2000 (NOHSA 2000) stated that the prevalence of dental caries and periodontal disease was still high among this group. The prevalence of dental caries for the age group of 65-74 years was 95.2% and DMFX of 23.2. More than one third of the population in the group was edentulous, reaching up to almost half of them edentulous by age more than 75 years, while for periodontal disease, the proportion of healthy periodontium decreased as age increased (National Oral Health Survey of Adults 2000).

As such, dental students need to be equipped with skills, knowledge and positive attitudes towards the elderly, so that they are more confident when providing dental care for this group (Nitscheke et al. 2004; Preshaw & Mohammad 2005).

In Faculty of Dentistry, UKMMC, geriatric dentistry is taught as part of a module which includes a series of lectures and field trip activities to several old folks or nursing homes around Kuala Lumpur and state of Selangor. The series of lectures introduce students to basic aspects related to oral care and management of the elderly patient. At the end of the module, students are expected to demonstrate understanding of general health and oral health needs of the elderly and readiness to clinically manage an elderly patient.

In addition to clinical teaching, students are also exposed to the group of elderly in the community. Visiting the old folks' or nursing home will provide opportunities for the students to meet and interact with the elderly in their own environment besides in the clinic, to provide health education in a community setting and to develop a caring attitude towards underserved communities.

Therefore, the main aim of this study was to assess the final year dental students' knowledge about older people, as well as their perception towards the training in geriatric dentistry. The findings may help to improve the conduct of geriatric teaching in the faculty including the didactic courses, clinical rotation and field work, and to strengthen clinical management and communication skills of the students.

MATERIALS AND METHODS

All the final year students of Faculty of Dentistry UKMMC participated in the study (n=83) in 2007. They were required to complete a written questionnaire in the classroom that took between 10 to 15 minutes. The questionnaire comprised of three sections: 1) Palmore's Facts on Aging Quiz; 2) Oral health and social concerns of patients; and 3) Students'

perception towards the teaching of geriatric dentistry.

Palmore's Facts on Aging Quiz (FAQ II) (Palmore 1998), consisted of 25 items, used to measure the basic knowledge about elderly and aging, especially in the health-related professions (Table 1). The students were assessed whether the 25 item questions were true or false. Questions in Section 2 were based on the questionnaire developed by Jude et al in 2005 (Jude et al. 2005). The information obtained from this section was used to assess the students' knowledge about specific psychosocial and health problems that can become barriers to the continuity of care. Questions in Section 3 were to assess the student's perception in the management and communication skills with the elderly patients before and after completing the geriatric dentistry module. Students were also required to select the main barriers and limitations faced during the conduct of the geriatric module in the faculty.

In establishing the validity of content, items in the questionnaire were examined and revised by our Dental Public Health consultant in Faculty of Dentistry, UKM. The questionnaire was pre-tested in a different group of clinical students prior to the actual study.

RESULTS

Demographic characteristic

A total of 83 final year students participated in the study. Their age were between 23 to 26 years old, with the mean age of 24.5 years. There were 14 male students (16.9%) and 69 female (83.1%). The ethnic group showed that majority of the students were Malays (63%; n=52), followed by Chinese (36%; n=30) and one Bumiputra-Kadazan.

Table 1: Percentage of correct FAQ II answers scored by students and level of knowledge category.

Item	% (n=83)
High Correct Response Rate Items (70+ percent)	
High blood pressure increases with age. (T/F)	100
All five senses tend to decline with age. (T)	98.8
Older persons take longer time to recover from physical and psychological stress. (T)	97.6
It is very difficult for older adults to learn new things. (F)	94.0
Physical strength declines in old age. (T)	92.8
Personality changes with age. (F)	91.6
Memory loss is a normal part of aging. (T)	89.2
All women develop osteoporosis as they age. (F)	85.5
Older people are much happier if they are allowed to disengage from society. (F)	80.7
Older workers cannot work as effectively as younger workers. (F)	75.9
The majority of old people are bored. (F)	73.5
Moderate Response Rate Items (30 – 70 percent)	
Bladder capacity decreases with age, which leads to frequent urination. (T)	68.7
The modern family no longer takes care of its elderly. (F)	67.5
Clinical depression occurs more frequently in older than younger people. (F)	66.3
A person's height tends to decline in old age. (T)	63.9
Research has shown that old age truly begins at 65. (F)	62.7
Constipation increases in more people as they get older. (F)	59.0
Most of older adults consider their health to be good. (T)	51.8
Older adults are less anxious about death than are younger and middle-aged adults. (T)	45.8
In general, most old people are pretty much alike. (F)	42.2
Low Response Rate Items (<30 percent)	
Older females exhibit better health care practices than older males. (T)	26.5
Most old people are set in their ways and unable to change. (F)	24.1
As people grow older, their intelligence declines significantly. (F)	22.9
Older people tend to become more religious as they grow older. (F)	19.3
The life expectancy of men at age 65 is about the same as that of women. (F)	9.6

Knowledge on aging

Results from the Palmore's Facts on Aging Quiz (FAQ II) showed that 24.1% of the students (n=20) scored more than 70% correct answer for all items while 73.5% (n=61) scored between 50-70%. Based on individual items, the FAQ II items that fell within the high correct response group were those that were related to the health of older adults (Table 1). These include knowledge on hypertension, stress, physical strength, memory loss and osteoporosis. For moderate range of correct items, the issues were

on clinical aspects like bladder capacity, clinical depression and constipation. Students also had moderate knowledge on social aspects of aging like role of modern family members in taking care of the elderly (67.5%) and feeling of anxiety towards death among elderly (45.8%). The low category of correct response rate items mainly focused on behavioural aspects of the elderly. Less than 30% of the students answered correctly on items that included knowledge on health care practices between gender (26.5%), ability to change (24.1%) and practice of religion in old age (19.3) (Table 1).

Table 2: Perception of students (in percentage) on why elderly patients failed their dental appointments.

Item	%
Physical incapacity or disability	97.6
Transportation problems	94.0
Complex and overlapping priorities - teeth are not at the top of priority list.	83.1
Financial problems	79.5
They do not understand how important keeping appointments is	67.5
Sometimes other problems become overwhelming and self-care seems unimportant.	66.3
They just don't care about oral health.	65.1
Fear of dentistry (fear of dental things/pain/reprimand from the dentist)	56.6
Abuse or neglect by a family member or caregiver	47.0

Table 3: Pre- and post-evaluation of the skills learned by students during geriatric dentistry teaching

No.	Items	Agree and Strongly agree	
		Pre-evaluation (%) (n=83)	Post-evaluation (%) (n=75)
1	Understanding general concerns of the elderly	88.0	92.0
2	Understanding aspects of oral care regarding the elderly	92.7	93.4
3	Understanding difficulties in performing oral hygiene faced by the elderly	86.7	94.7
4	Understanding barriers to obtain oral care (treatment) faced by the elderly	88.0	98.7
5	Overcoming barriers to communicating with elderly	75.9	64.0
6	Developing more confidence in dental management of the elderly	72.2	69.3

Awareness towards patients' social concerns

The nine items that prevent older people from keeping appointment were ranked in order of students' selection from the items (Table 2). The top three barriers were identified as: physical disability, transportation problems and complex and overlapping priorities (97.6%, 94% and 83.1% respectively). Students also perceived financial barrier (79.5%) as an important factor that made the elderly missed their appointments compared to fear of the dental procedures (56.6%). More than half of the students also agreed that abuse or neglect by family members or caregivers was not the reason for the elderly to miss their dental appointments.

Students' perception towards teaching of geriatric dentistry in UKM

Table 3 showed the results of students' perception towards the teaching of geriatric dentistry in UKM prior and following the educational intervention. Comparison between both scores (pre-and post-tests) revealed very little changes on the perceived understanding and abilities of the students upon completing the module. About 88% of the students reported that they had understood the general concerns of the elderly before the intervention, while 92% agreed during post-evaluation. After undergoing the geriatric module, the students also showed some increase in the percentage on what they perceived to be the barriers faced by older adults in getting dental treatment

(88.0% and 98.7% respectively). Communication was one of the barriers highlighted when managing the elderly patients. However, the results showed that the proportion of students who perceived to have overcome the barriers communicating with the elderly did not change greatly after the intervention. Thirty-six percent of the students reported that they were still having problems in communicating with the elderly after undergoing the module. No improvement was observed on their perceived level of confidence in management of older adults during dental treatment (pre- 72.2% and post- 69.3%).

As for the barriers and limitations faced during the module, the students ranked lack of educational materials specific to geriatric dentistry (80%) and lack of clinical sites experience for geriatric patient care (80%) as the main source. Other barriers that were reported include lack of clearly articulated geriatric curriculum (72%), insufficient number of full-time faculty members (72%), lack of interest in the field (68%) and the overloaded dental curriculum (54.6%).

DISCUSSION

One of the objectives of this study was to assess the knowledge of undergraduate dental students on aging. The assessment was based on the Palmore's Facts Aging Quiz II (Palmore 1998), and the social concerns factors were based from the questionnaire developed by Jude et al in 2005 (Jude et al. 2005). The FAQ II has been widely used in the health-related disciplines to evaluate knowledge about the elderly. From this study, evaluation of each individual item in the FAQ II showed that the high correct response group was those items which relate to the health of the elderly, while the moderate category were those items which were involved with clinical and social aspects of aging. These findings may reflect that

the students had good to moderate knowledge about medical and general aspects of aging. Correct responses in the low category items that involve behavioural aspects may reflect perceived insufficient knowledge about these issues among the students. It is also important to note that dental students are often under pressure to meet their educational and clinical requirements for graduation. Therefore, the need to emphasize certain issues in geriatric dentistry teaching like psychological and behavioural aspects among older people has to be looked into. Recently, geriatric dental programmes in the United States have focused on a broader range of topics in the management of elderly patients. A survey conducted to 54 dental schools in the U.S showed that all schools taught about the barriers to dental care that may be experienced by elderly, while the psychosocial problems and socioeconomic difficulties were taught in 96 and 94 percent of schools, respectively (Mohammad et al. 2003). It appears that the geriatric dentistry teaching in many schools now has put more emphasis on social problems related to aging.

The second objective of this study was to determine the main social factors that prevent older adults from keeping to their dental appointments. By identifying the social concerns that may affect the utilization of dental services by older people, dental students can now try to understand the bio-psychosocial issues among this group and thus develop a positive attitude towards them. Similar to findings from this study, Fabiano et al. also reported that transportation problem and complex and overlapping priorities were ranked high by the students as reasons why older adults failed their appointments. Abuse and neglect by family members were also ranked lowest (Fabiano et al. 2005).

About 79.5 percent of students in this study also perceived financial barrier as

one of the important factors that made the elderly missed their appointments. This is true as several studies have reported that income was a significant predictor of utilization among older adults. Kiyak and Reichmuth (2005) examined some determinants of older person's dental service utilization and revealed that poor older adults were less likely to seek dental care compared to those in the high income group (Kiyak & Reichmuth 2005). A similar pattern was also seen among the Chinese elderly whereby those who were better educated and wealthier had more visits to a dentist (Lo et al. 2001). However, further research to look into the relationship between perceived and actual reasons why the elderly do not use the dental services or keep to their dental appointments need to be established.

This study also revealed that there were not many changes in the perceived competencies of managing older patients upon completing the geriatric module. Similar finding was observed in a study by Wood and Mulligan in 2000 that aimed to assess changes in the knowledge and attitude of dental students towards aging after receiving geriatric training. Overall, the study showed only a small increase in knowledge and unchanged attitudes toward elderly patients upon receiving the course (Wood & Mulligan 2000). Therefore, additional research is needed to confirm whether this trend is actually true at the faculty level. Should it be confirmed, dental educators in the faculty need to identify strategies to improve the students' competencies of managing older patients.

In the present study also, almost one-third of dental students were still unable to overcome barriers and did not gain more confidence in dental management of elderly patients. These findings were observed as the dental students were

exposed to various types of elderly patients, with different level of complexity in relation to their clinical management. For example, some of the elderly patients presented in dental clinics would have multiple medical problems and impaired physical abilities. The number and type of patients treated in the polyclinic and the visits to multiple old folks' home for each group would have some influence on and provide a variety of exposure for the students. Therefore, the level of perceived competencies about elderly individuals may vary due to the differences in clinical as well as community exposures. However, in a qualitative analysis following a clinical rotation in long-term care facilities for the elderly, positive insights were obtained from the dental students. They described the rotation as an important contributor to their clinical maturation, very worthwhile and enhanced their appreciation of a dentist's professional responsibilities (MacEntee et al. 2005).

In the faculty, geriatric dentistry is taught within its module, and coordinated by the department of Dental Public Health. Exposures in community settings are greatly needed whereby the students can actually feel and experience the real life situation. Besides oral health, students also obtain knowledge on other areas like behavioural sciences and quality of life. A rotation programme in outreach clinics where students will have the opportunity to treat and manage the oral health conditions of elderly patients is one of the strategies that can be undertaken to improve geriatric teaching (Chavez & LaBarre 2004). Therefore, collaboration with other clinical departments in the faculty is greatly needed. These departments can assist the students by helping them to develop the skills needed (clinical and communication skills) when managing elderly patients. Then the training of geriatric dentistry will

not only focus on the techniques but also on other generic skills.

CONCLUSION

Future interventions should focus on improving the educational process, thus providing dental students with positive experiences when dealing with elderly patients. This will then initiate the development of positive attitudes regarding the elderly among dental professionals. Early exposure to geriatric teaching for pre-clinical students may also be beneficial in the improvement of knowledge and perception toward the elderly as they move to the clinical years.

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