



Characteristics of Thai dental patients visiting College of Dental Medicine, Rangsit University: An Elderly Study

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Abstract

Aging dental patients are increasing according to an extension in the longevity of life. The greater occurrence of the medical conditions and medication use and a relationship with aging patients are also supposed. This study aims to investigate the occurrence of medical conditions and medication use in Thai elderly dental patients who visited the College of Dental Medicine, Rangsit University, and to determine the association between these conditions and the patients' demographics as well as personal data. Systematic selected 712 dental chart records during 2013-2017 were retrospectively reviewed. Data were analyzed at the significant level of $p < 0.05$. Eighty-eight (12.3%) dental chart records of elderly dental patients were retrieved and studied. Thirty-five (39.8%) were male while 53 (60.2%) were female. The medical conditions and medication use were revealed in 58 (65.9%) and 55 (62.5%) patients. The most common medical condition was hypertension (37.5%), followed by diabetes mellitus (13.5%) and dyslipidemia (10.4%). The most common medication use was the drugs for cardiovascular diseases (42.4%), followed by antidiabetic drugs and drugs for thyroid disorders (16.3%). Antidyslipidemic drugs were found in 12.0% of the elderly patients. A significant association of elder age with body mass index ($p = 0.004$), systolic blood pressure ($p < 0.001$), medical conditions ($p < 0.001$), and medication use ($p < 0.001$) was shown. The aging dental patients are typically increased in the complexity of the medical conditions and medication use. Therefore, dentists should consider the general health status of elderly dental patients before performing dental operations to prevent dental complications and provide the most beneficial dental treatment.

Keywords: Medical conditions, Medication use, Elderly, Dental patients, Dental treatment

1. Introduction

In the Thai aging society, the longevity of life is expected to increase according to advanced medical technology and access to the health care system. The dental patients are mostly in the elderly group, in which the complexity of the medical conditions and medication use is also found more commonly. Multiple drug use and long-term drug therapy increase significantly with advancing age. Therefore, the elderly and factors associated were necessary because a dentist should provide a proper treatment plan for each elderly patient. The dentists should be aware of such situations and prepare themselves before any dental treatment to provide safe and effective treatment without triggering a medical emergency. Thus, evaluating the status of the patient who has a complicated medical history or takes several drugs is very important for dental treatment plan and management.

College of dental medicine, Rangsit University, is the first private dental school that develops a comprehensive dental treatment. The dental treatment data are entirely recorded and updated by dental students under the supervision of supervisors. However, the characteristics of treated dental patients have never been studied.

2. Objectives

- 1) To study the occurrence of medical conditions and medication use in a group of elderly patients receiving treatment at the College of Dental Medicine, Rangsit University, during 2013-2017
- 2) To determine the association between medical conditions, medication use, and the patients' demographic as well as personal data in the study group



3. Materials and Methods

The patients' archives of the dental clinic during 2013-2017 were retrospectively reviewed. Inclusion criteria were a complete dental record of the oral examination of the patients aged 12 years and above who visited the dental clinic at the College of Dental medicine, Rangsit University. In contrast, incomplete dental records and patients of age younger than 12 years old were excluded from the study. Seven hundred and twelve dental chart records have been systematically collected. Patient information regarding age, sex, allergy, systemic diseases, medication uses, medical consultation, and dental treatment history that the dental students had recorded under the supervision of dental clinic supervisors were reviewed. For the result analysis, the data of the dental patients' chart records were divided into 2 groups; adults (< 60 years old) and elderly (\geq 60 years old). Eighty-eight dental chart records of the elderly dental patients were obtained and are currently present.

Statistical analysis was performed using Statistical Package for the Social Sciences version 22.0 for Windows (SPSS Inc., Chicago, IL, USA). The data were analyzed using descriptive statistics. Pearson's Chi-square and Fisher's exact test at the significant level $p \leq 0.05$ were used for association analyses.

4. Results and Discussion

The patients' chart records whose age was more than 60 years old were 88 (12.3%), by which 53 (7.4%) were female and 35 (4.9%) were male as depicted in Table 1. The female-predominant result was similar to the previous studies (Delavarian & Zavar, 2004; Chandler, Martinez, & Bullon, 2004; Danuthai, Sappayatosok, Bijaphala, Kulvit, & Sereerat, 2009) because females are probably of awareness and intend to seek dental treatment more than males. The percentage of the elderly in the current study was, however, less than that of the previous studies (Jainkittivong, Aneksuk, & Langlais, 2004; Kaomongkolgit, Daroonpan, Tantanapornkul, Palasuk, and Chansamat, 2019). Most dental patients were in either working age or adulthood. They are the majority of the collected data since they were able to access and afford the private dental school's treatment system.

The characteristics and association between the patients' age and demographic data, body mass index (BMI), medical conditions, and medication use are subsequently illustrated.

Table 1 The demographic data of the dental patients who visited the College of Dental Medicine, Rangsit University, during 2013-2017

	Total N(%)	Males N(%)	Females N(%)	p
	712 (100%)	255 (35.8%)	457 (64.2%)	
Age (years)				
< 20	111 (15.6%)	35 (4.9%)	76 (10.7%)	
20-59	513 (72.1%)	185 (26%)	328 (46.1%)	-
\geq 60	88 (12.3%)	35 (4.9%)	53 (7.4%)	
Body Mass Index (n=593)				
Normal weight (18.5-22.99 kg/m ²)	86 (14.5%)	22 (3.7%)	64 (10.8%)	
Underweight (<18.5 kg/m ²)	248 (41.8%)	70 (11.8%)	178 (30.0%)	0.001
Overweight (23.00-24.99 kg/m ²)	89 (15.0%)	39 (6.6%)	50 (8.4%)	
Obese (>25 kg/m ²)	170 (28.7%)	75 (12.7%)	95 (16.0%)	
Latest physical examination				
\leq 1 year	470 (70.9%)	168 (25.3%)	302 (45.6%)	0.591
> 1 year	193 (29.1%)	64 (9.7%)	129 (19.4%)	
Alcohol				
Never	440 (65.0%)	114 (16.8%)	326 (48.2%)	
Current	235 (34.8%)	127 (18.8%)	108 (16.0%)	< 0.001
Former	2 (0.2%)	1 (0.1%)	1 (0.1%)	

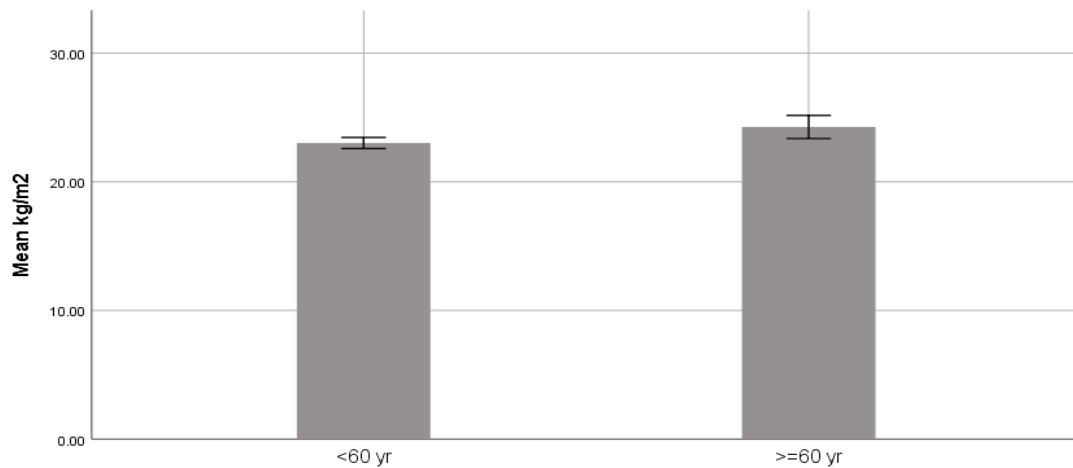


Figure 1 BMI according to the age group

The average BMI (24.26 kg/m^2) of the elderly patients was significantly higher than that of the adult patients (23.02 kg/m^2 , $p=0.004$). Nevertheless, the mean BMI in both groups was similarly categorized in the overweight group, ranging from 23.00 to 24.99 (Figure 1).

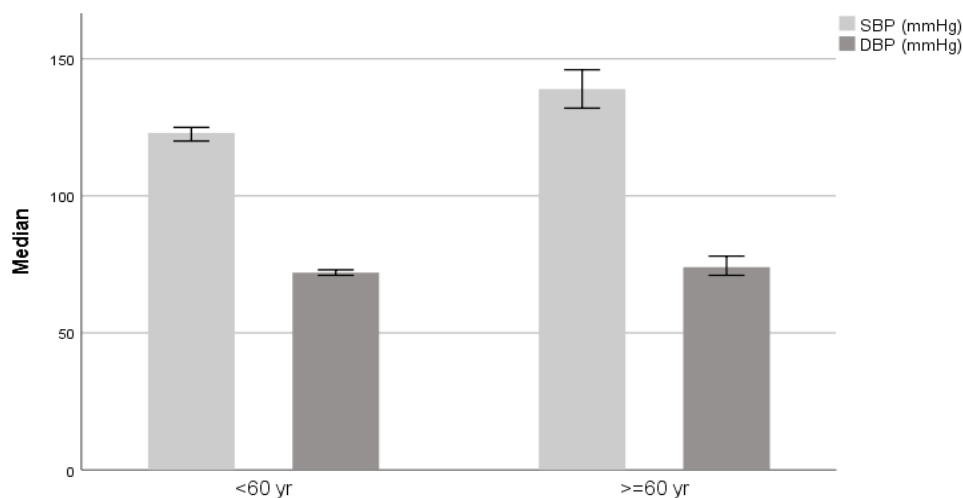


Figure 2 Levels of SBP and DBP according to the age group

The elderly dental patients had higher systolic blood pressure (SBP; 139 (129, 152 mmHg)) and diastolic blood pressure (DBP; 74 (68, 84 mmHg)) than those of the adult patients; 123 (112, 135 mmHg, 72 (64, 80 mmHg)), respectively (Figure 2). The median SBP of the elderly was categorized in the pre-hypertension stage according to the Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure JNC7 classification (Thai hypertension society, 2019). Furthermore, SBP showed a statistically significant association with the elder age group ($p < 0.001$).

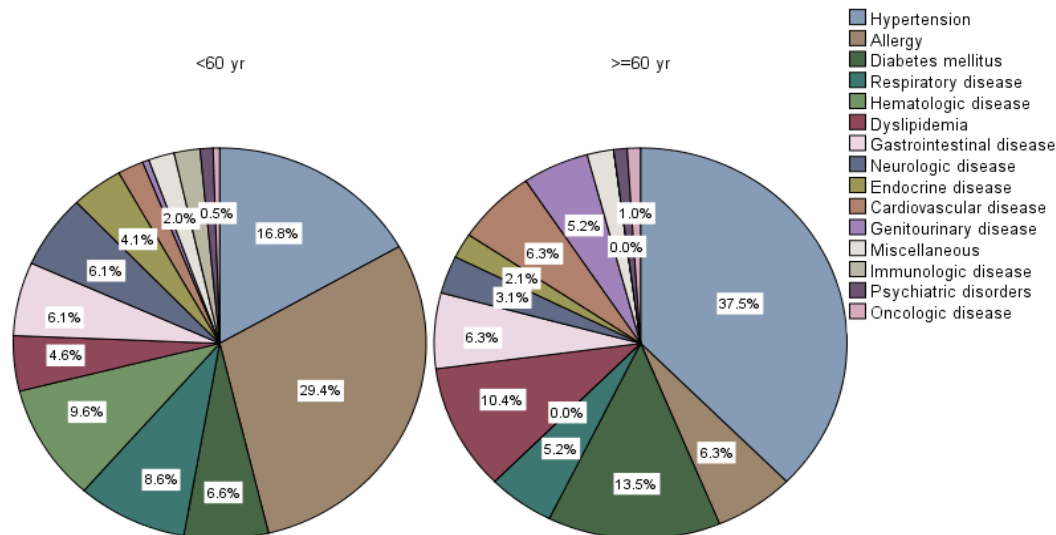


Figure 3 Occurrence of medical conditions according to the age group

The medical conditions were exhibited in 217 (30.5%) patients, by which 70 (9.84%) were male and 147 (20.7%) were female. The proportion of the elderly patients with medical conditions was 65.9%, while 27.3% were adults and 17.1% were teenagers. Regarding the teenagers, most of them (82.9%) had no medically compromised conditions. In contrast to the elderly group, the researchers found that the proportion of patients with and without medical conditions was 1.9:1, which was in agreement with the study by Kaomongkolgit et al. (2019) who reported a 2:1 ratio in patients with and without systemic diseases. However, the medical conditions in the present study are less than those of Jainkittivong et al. (2004) and Kaomongkolgit et al. (2019), which presented 82.5% and 66.3% of elderly Thai dental patients who had a history of systemic diseases, respectively. The most common medical condition in 88 elderly patients was hypertension (37.5%), followed by diabetes mellitus (13.5%) and dyslipidemia (10.4%), which were similar to the studies of Chaichalernsak et al. (2010), Maryam et al. (2015), and Kaomongkolgit et al. (2019). A history of taking both SBP and DBP before every dental treatment visit had to be performed might explain the most common medical condition exhibited. Other 624 patients had an allergy (29.4%), hypertension (16.8%), and hematologic disease (9.6%) (Figure 3).

The statistically significant association between the elderly group of the patients with hypertension, dyslipidemia, diabetes mellitus, cardiovascular diseases, and genitourinary diseases was demonstrated ($p < 0.001$). The relation of gastrointestinal diseases with the age of over 60 was also statistically significant ($p = 0.016$).

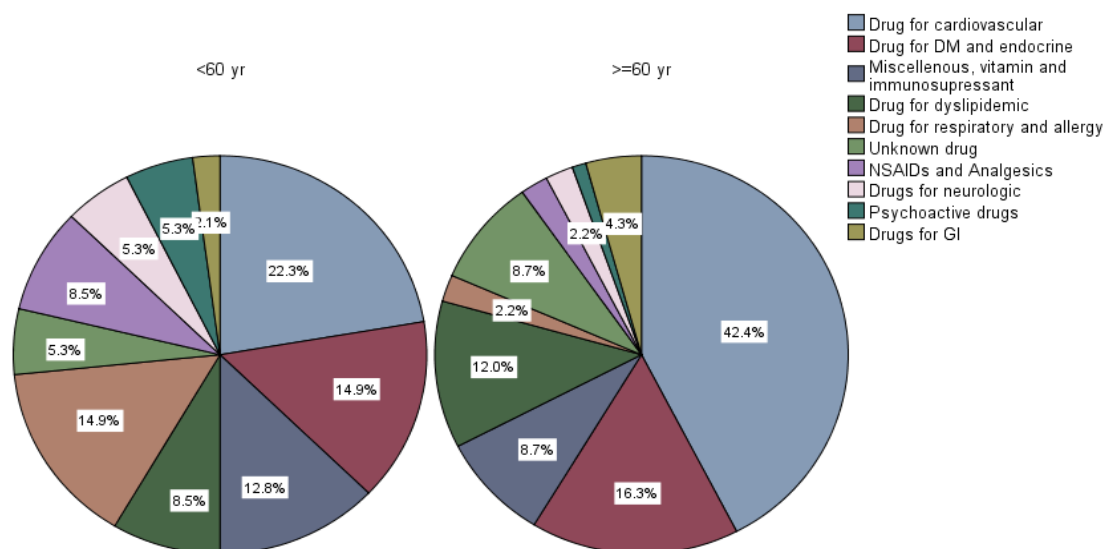


Figure 4 Occurrence of medication use according to the age group

One hundred and thirty-six (19.1%) patients had medication use. Fifty-five (7.7%) were elderly patients whereas 81 (11.4%) were adult patients. Concerning the elderly group, the authors found that the proportion of the patients with and without medication use was 1.7:1. A study by Jainkittivong et al. (2004) and Kaomongkolgit et al. (2019) showed that 68.3% and 67.7% of the elderly Thai dental patients took medications, with 1.9:1 and 2.1:1 ratios of the patients taking medications to not taking medications, respectively. The previous studies' higher occurrence may be due to the average age among the participants that was higher than this study. However, the result of this study supports a trend of more drug use increasing significantly with advancing age due to the increasing occurrence of systemic disease, especially chronic diseases. Of 55 elderly patients with medication use, 30 (54.5%) patients were female and 25 (45.5%) were male, with a 1.2:1 female to male ratio. This result conforms with the female to male ratios of 1.2:1 and 2.7:1 in the studies of Jainkittivong et al. (2004) and Chaichalermtrak et al. (2010), respectively. The most common medication use in 88 elderly patients was cardiovascular disease drugs (42.4%) while drugs for diabetes mellitus as well as endocrine system (16.3%) and antidyslipidemic drugs (12%) were subsequently discovered (Figure 4).

The statistically significant associations between the elderly who used drugs for cardiovascular diseases, drugs for dyslipidemia, and drugs for endocrine were demonstrated ($p < 0.001$). The association of drugs for the gastrointestinal tract was also statistically significant ($p = 0.003$).

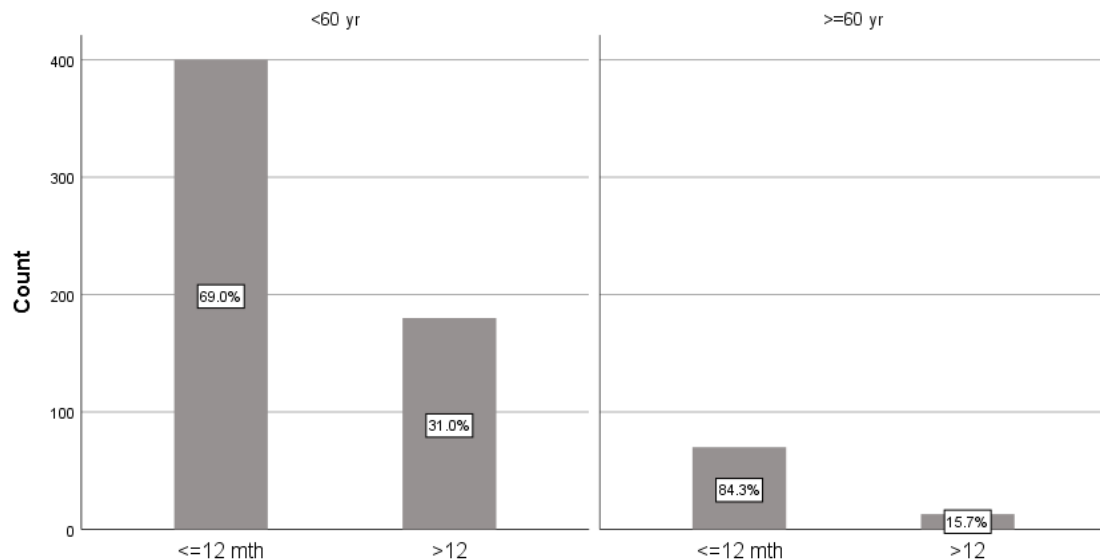


Figure 5 Duration of latest physical examination according to the age group

The duration of the latest physical examination represents the screening, update, and medical condition progression. Most patients; 470 (70.9%), had ≤ 12 months of the latest physical examination. One hundred and sixty-eight (25.3%) were male and 302 (45.6%) were female. Of all elderly patients, 70 (84.3%) had ≤ 12 months of the latest physical examination, and only 13 (15.7%) patients had >12 months of the latest physical examination (Figure 5). The concern of general health in the patients who seek dental treatment might be the explanation.

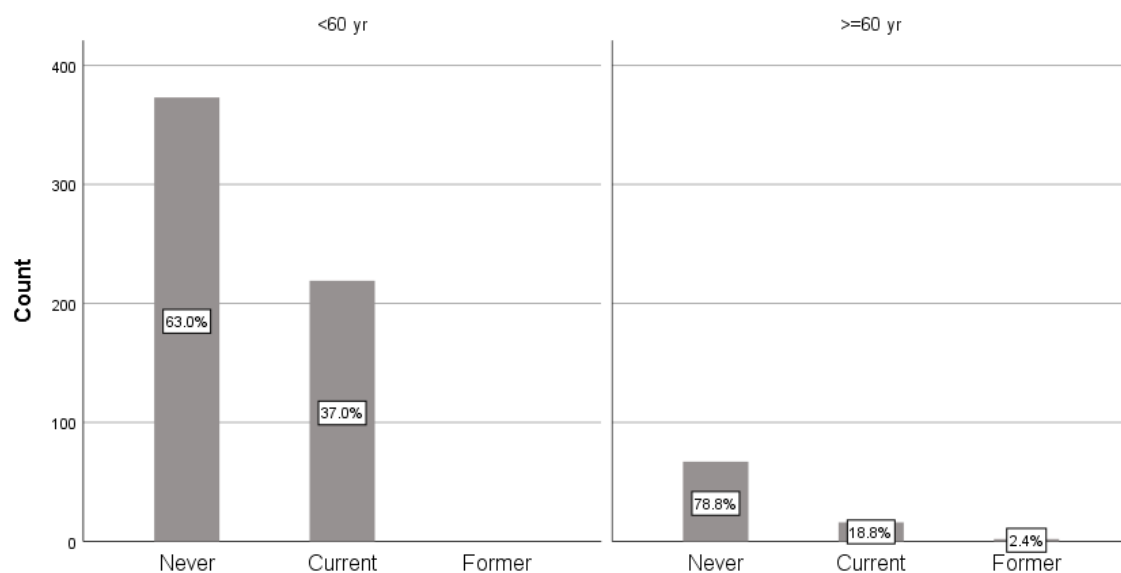


Figure 6 Type of alcohol consumption according to the age group



Smoking and alcohol consumption were related to the systematic metabolism, some medical conditions such as liver disease and chronic organ damage, and periodontal health, which may worsen dental treatment. The elderly in the present study had a lower percentage of current alcohol consumption than the adult patients (Figure 6). Most patients in the elderly group never had alcohol consumption or never smoke in the lifetime or were former, which means that the duration of quitting smoking or alcohol consumption was more than one year.

5. Conclusion

The elderly dental patients showed a significant occurrence of the medical conditions and medication use essential in dental management. The frequent medical conditions included hypertension, diabetes mellitus, and dyslipidemia. The common medication use was the drugs for cardiovascular diseases, drugs for diabetes mellitus, and drugs for dyslipidemia, which were related to the common medical condition obtained. Most elderly were overweight and had high blood pressure. A careful history of taking and proper management to prevent morbidity are mandatory for dental treatment in elderly dental patients.

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