

Senior dental student's attitudes toward older adults and knowledge of geriatric dental care in the Islamic Republic of Iran

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مواقف طالب السنة الأخيرة من كلية طب الأسنان تجاه البالغين الأكبر سناً والمعرفة برعاية الأسنان للمسنين في جمهورية إيران الإسلامية بحرية حاتمي، أريزوو ابن أحمددي، محمد حسين خوشنفيزان، هاري لاندو

الخلاصة: ينبغي أن يكتسب طلبة طب الأسنان المعرفة برعاية الأسنان للمسنين، وعليهم أن يتبنوا مواقف إيجابية تجاه المرضى من كبار السن. وتُقِيم هذه الدراسة معرفة الطلاب في السنة الأخيرة من كلية طب الأسنان برعاية الأسنان للمسنين والمواقف التي يتخذونها حيال المرضى من كبار السن. وأجري مسح باستخدام استبيان وصفي مستعرض على متطوعين من طلاب السنة الأخيرة في جميع كليات طب الأسنان (وعدددهم 512 طالباً) في جمهورية إيران الإسلامية. وجرى تحليل الاستبيانات التي تم استكمالها (وعدددها 464 استبياناً). وكان متوسط النتائج الخاصة بمعرفة المبحوثين ومواقفهم 12.7 (بانحراف معياري 2.9) و 48 (بانحراف معياري 6.1) على التوالي. ولم تختلف معرفة الطالبات الإناث عن معرفة الطلاب الذكور اختلافاً يُعتدّ به، لكن كانت نتيجة مواقفهم مختلفة. فجميع الطلاب توافرت لهم مستويات منخفضة إلى متوسطة من المعرفة برعاية الأسنان للمسنين ومن المواقف تجاه كبار السن، ومن ثم كانت التوصية بعمل برنامج للتدخل. وقد أجريت الدراسة بغرض استخدام نتائجها لإدماج برامج رعاية أسنان المسنين في المناهج الدراسية لكليات طب الأسنان في جمهورية إيران الإسلامية.

ABSTRACT Dental students should have knowledge of geriatric dental care and positive attitudes toward elderly patients. This study assessed senior dental students' knowledge of geriatric dental care and their attitude towards elderly patients. A descriptive cross-sectional questionnaire survey was conducted on volunteer senior students in all dental schools ($n = 512$) in the Islamic Republic of Iran. The completed questionnaires ($n = 464$) were analysed. The mean scores of respondents' knowledge and attitudes were 12.7 (SD 2.9) and 48 (SD 6.1) respectively. Female and male students' knowledge did not differ significantly but their attitudes score was different. The majority of dental students had low to moderate levels of knowledge of geriatric dental care and attitudes toward elderly people; therefore, an intervention programme is indicated. We conducted the study to use the findings to incorporate geriatric dental care programmes into dental school curricula in the Islamic Republic of Iran.

Connaissances des soins dentaires gériatriques chez les étudiants en dernière année de médecine dentaire en République islamique d'Iran et attitudes de ces derniers à l'égard des personnes âgées

RÉSUMÉ Le nombre de personnes âgées augmente partout dans le monde et les professionnels de santé sont confrontés à des difficultés pour répondre à leur besoins spécifiques. Les étudiants en médecine dentaire devraient posséder des connaissances en soins dentaires gériatriques et cultiver des attitudes positives à l'égard des patients âgés. La présente étude a évalué les connaissances des étudiants en dernière année de faculté dentaire en matière de soins dentaires gériatriques et leurs attitudes envers les patients âgés. Une enquête descriptive transversale, administrée par questionnaire, a été menée en dernière année de médecine dentaire en République islamique d'Iran auprès d'étudiants volontaires ($n = 512$). Les questionnaires complétés ($n = 464$) ont été analysés. Les scores moyens des connaissances et des attitudes des répondants étaient de 12,7 (ET 2,9) et 48 (ET 6,1), respectivement. Les connaissances des étudiants de sexe masculin et de sexe féminin étaient relativement similaires, tandis que leurs scores concernant les attitudes étaient différents. La majorité des étudiants en dernière année de médecine dentaire possédaient un niveau de connaissances faible à modéré dans les domaines des soins dentaires gériatriques et des attitudes à l'égard des personnes âgées. En conséquence, un programme d'intervention est indiqué. Nous avons mené la présente étude afin d'exploiter les résultats et d'intégrer des programmes de soins dentaires gériatriques dans le cursus de la faculté de médecine dentaire en République islamique d'Iran.

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Introduction

A worldwide demographic transition is under way and the elderly population is growing rapidly. The number of elderly people in 2000 was 600 million and this number is estimated to double by 2025. It is expected that there will be 2 billion people aged 60 years and over in 2050. A large portion (80%) of these older adults will be living in developing countries [1].

The number of older people in the Islamic Republic of Iran, as in other developing countries, is rising steadily. In 1985, older people accounted for 6.6% of the total population in the Islamic Republic of Iran; now they account for approximately 7.3% of the total population and this figure is estimated to increase to 27% in 2025 [2].

This fast-growing older population is due to improvements in medical care and hygiene. Chronic diseases such as hypertension, cardiovascular disease and diabetes are more prevalent in the elderly [1]. The oral health of elderly individuals has been reported as poor worldwide and their treatment needs are extensive [3,4]. In the near future, a greater portion of the patient population that seeks dental care will be elderly and their partial tooth loss, accompanying medical conditions and use of multiple medication will lead to increased complexity of treatment [3,4]. WHO is focused on the elderly population as a priority group, therefore dentists should be aware of special oral health needs in this population and be able to meet those needs [1,5,6].

In the current Iranian dental curriculum, some topics related to geriatric dentistry are taught in prosthetic dentistry and oral medicine [7]. However, in recent revisions of the dental curriculum, there has been insufficient emphasis on a special needs approach [8]. Dental students, as future dental professionals, should have essential knowledge about problems with elderly patients and should recognize them as an important sector of patients [9].

The present study was undertaken to assess Iranian senior dental students' knowledge of geriatric dental care and attitudes towards older adults.

Methods

A cross-sectional study was conducted with 464 senior dental students from all 18 dental schools in the Islamic Republic of Iran in the spring of 2011, near the completion of the academic year. The students were selected as they were at the end of their education and had experience of different types of practical requirements and theoretical topics in their curriculum.

Researchers visited the dental schools and coordinated with educational departments before gathering data. A self-administered questionnaire was distributed to volunteer students. These students were provided with a brief explanation of the questionnaire, which was administered in one of their regular class sessions to increase the likelihood of a high response rate. The students returned the completed questionnaires at the session. Students who were absent from class were not contacted.

Content validity of the questionnaire was evaluated by experts with clinical experience in the care of elderly patients, as well as by academic staff and dental public health practitioners. Senior dental public health students assessed its validity.

We piloted the questionnaire with some students to assess its clarity, the time needed for answering the questionnaire and the ease of the instructions. The piloted questionnaire was answered by 21 senior students in a private dental school in Tehran.

A covering letter included information about the importance of the study. The questionnaire consisted of three main parts and was anonymous.

To gain background information, the questionnaire included questions

about sex, age, having grandparents, and relationship with grandparents and other important elderly persons.

To assess the dental students' knowledge about geriatric dental care, a questionnaire was developed based on a review of geriatric dentistry references, guidelines [10,11] and expert opinions. The questionnaire contained 27 items in six themes: demography of ageing; the ageing process; normal ageing of the oral cavity; common oral conditions in the elderly; social aspects of ageing; and delivering and maintenance of care for older adults. The questionnaire consisted of close-ended questions with three options ("false", "true", "don't know"). "Correct" choices received a score of 1 and "incorrect" and "don't know" options a score of zero. The total scores represented the geriatric dental knowledge of the students and the results were reported as the mean score. The participants' final knowledge scores were divided into quartile groups based on the range 0–27 of possible scores.

Attitudes toward the elderly

The Geriatric Attitudes Scale [12] was used to investigate the attitudes of dental students toward elderly patients. The survey answers were recorded using a Likert item response with five categories ranging from strongly disagree = 1 to strongly agree = 5. A negative attitude was defined as a response of "strongly disagree" or "disagree". A positive attitude was defined as a response of "strongly agree" or "agree". A response of "not sure" was equal to uncertainty or indecision. To produce a total score for attitudes, the score of negative statements was reversed and positive statement scores were added. The final attitude scores (minimum of 14 and maximum of 70) were categorized into quartiles.

All responses were entered into a dataset and double keyed to ensure accurate data entry. Descriptive statistics, percentages and frequencies were computed for all variables. Analysis was conducted using SPSS, version 16. Differences in

scores between participants were calculated using the chi-square and Student *t*-test for independent samples.

Results

Of the senior dental students who received the questionnaire ($n = 512$), 464 subjects participated in the study (response rate = 91%). Most of the participants were female (67%) and the mean age of participants was 25.4 years. Table 1 shows the distribution of Iranian senior dental students according to their connectedness with elderly people. Women were far more likely to report having grandparents who currently were alive and were more likely to report having a close relationship with their grandparents. However, women and men did not differ in their connectedness with an older person other than their grandparents.

The senior dental students' mean scores on different area of knowledge questions are shown in Table 2. Mean scores of two areas (common oral conditions in elderly patients, and delivering and maintaining dental care for elderly patients) were higher and in other areas they were lower. In "delivering and maintaining dental care for the elderly" most of the students selected correct answers (70%), whereas incorrect answers were selected more (66%) in "social aspects of geriatric care". Only (7%) of students answered "don't know" for "normal ageing of oral cavity".

The percentage of Iranian dental students' agreement with statements given about old people is shown in Figure 1. Most of the students (> 70%) positively answered the statements: "looking after old people is a social duty", "listening to past experiences of old people is interesting" and "I pay more attention and I behave more understandingly to my old

patients than my young ones". A total of 76% disagreed with the statement "old people do not add much to society".

As shown in Table 3, female and male dental students did not show any statistical differences in their knowledge about geriatric dental care ($P = 0.21$) but there was a difference in their attitudes towards older adults ($P = 0.001$). Dental students who were connected with an older person other than their grandparents had significantly increased knowledge scores ($P = 0.001$). Students with a grandparent alive ($P = 0.048$), as well as those who were connected with any other old person, had more favourable attitude scores ($P = 0.003$).

Discussion

This study was designed to explore senior dental students' knowledge of geriatric dental care and their attitudes

Table 1 Distribution of Iranian senior dental students ($n = 464$) according to their connections with elderly persons

Connection to elderly	Total	Females	Males	<i>P</i> -value ^a
	No. (%)	No. (%)	No. (%)	
Have currently alive grandparents				
Yes	324 (70)	234 (75)	90 (41)	<0.0001
No	140 (30)	77 (25)	63 (59)	
Have a close relationship with grandparents				
Yes	268 (83)	196 (84)	72 (80)	0.001
No	56 (17)	38 (16)	18 (20)	
Have connection with any other elderly person				
Yes	234 (50)	155 (50)	79 (52)	0.396
No	230 (50)	156 (50)	74 (48)	

^aChi-squared test was used to evaluate statistical differences.

Table 2 Senior dental students' mean knowledge of geriatric dental care score

Area of knowledge	Answers to knowledge questions			Mean score of knowledge in each area (SD)
	Correct (%)	Incorrect (%)	Don't know (%)	
Demography of ageing	42	32	26	1.7 (0.8)
Ageing process	29	48	23	1.3 (0.9)
Normal ageing of oral cavity	44	49	7	1.8 (0.8)
Common oral conditions in elderly	53	16	31	2.1 (0.6)
Social aspects of geriatric dental care	32	66	12	1.0 (0.6)
Delivering and maintaining of dental care for elderly	70	11	19	2.8 (1.0)

SD = standard deviation.

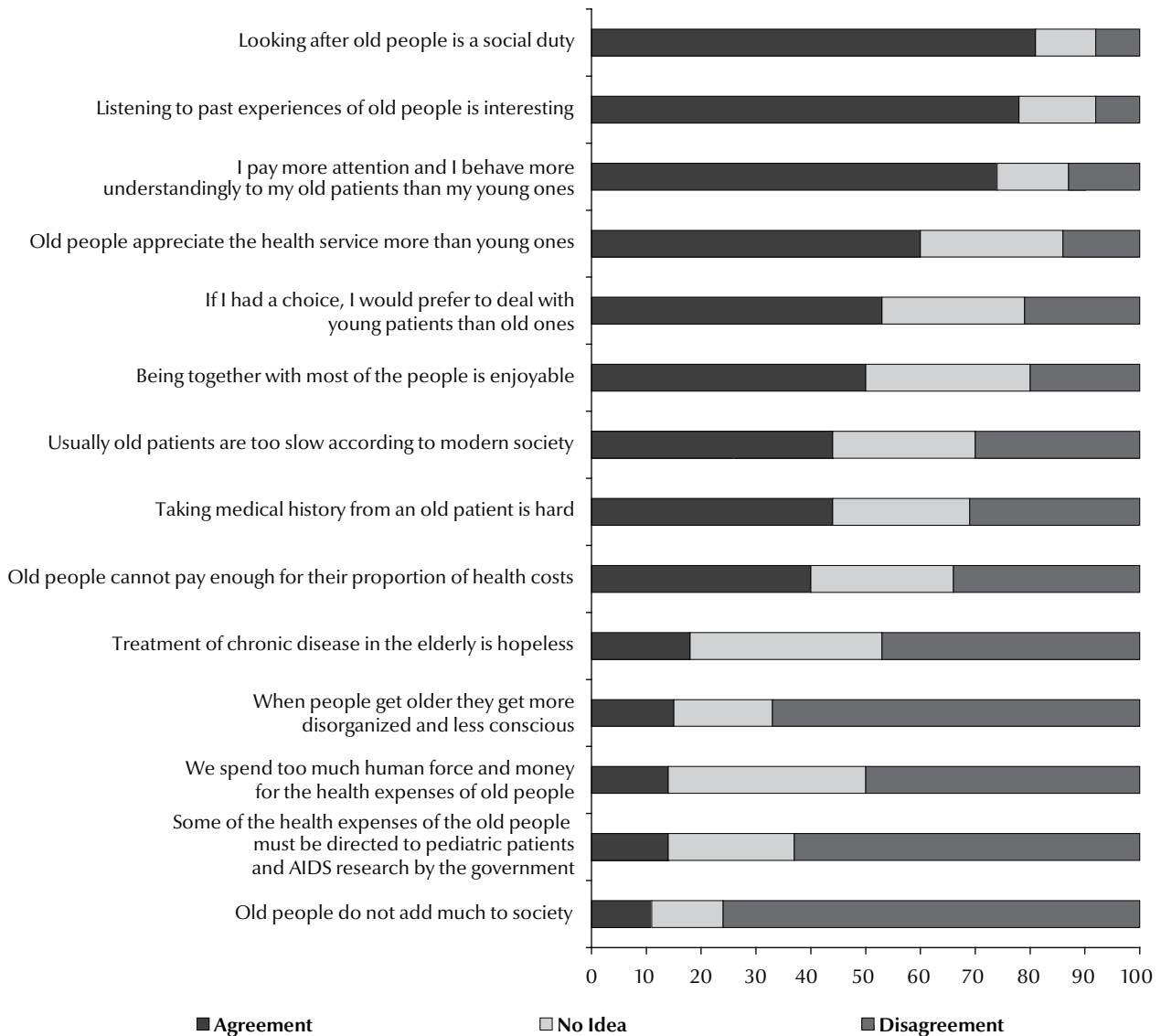


Figure 1 Percentage of Iranian dental students' agreement with statements given about older people

toward elderly patients. To our knowledge, no previous studies have been done on knowledge and attitudes of Iranian dental students pertaining to geriatric dental care and elderly patients. According to the results of the present study, the majority of dental students showed low or moderate knowledge of geriatric dental care. All dental schools in the Islamic Republic of Iran with senior dental students were included in the study to increase the representativeness of the study sample. The response rate was excellent, aided by one of the researchers visiting the dental schools and distributing and personally collecting

the questionnaires after an ordinary class sessions.

The rapid growth of the elderly population emphasizes the need for geriatric dental care knowledge in dental professionals. There have been some studies about knowledge of ageing using a validated and widely used questionnaire for health professions; however, few studies have focused on geriatric dental care knowledge in dental professionals [13–15]. A self-administered questionnaire based on geriatric dental care textbooks and references [16,17] was used in this study. This questionnaire assessed the geriatric dental care

knowledge of dental students. The statements for assessing dental students' attitudes were taken from the Geriatric Attitudes Scale developed by Reuben et al. [12].

Although the participants' overall knowledge mean scores were low, high correct response rates were observed in relation to common oral conditions in elderly people and in delivering and maintenance of care for older adults. At the time, some related topics on geriatric dentistry were part of the dental prosthesis and oral medicine departments in dental schools in the Islamic Republic of Iran. As a clinical requirement, students

Table 3 The mean geriatric dental care knowledge score of senior Iranian dental students and their attitudes toward the elderly (n = 464), according to the study variables

Variable	Mean knowledge score (SD)	P-value ^a	Mean attitudes score (SD)	P-value ^a
Sex				
Female	12.6 (2.6)	0.21	49.0 (5.1)	0.008
Male	13.0 (3.2)		47.0 (7.7)	
Having currently alive grandparents				
Yes	12.6 (2.7)	0.149	48.5 (5.7)	0.048
No	13.1 (3.1)		47.1 (7.0)	
Having a close relationship with grandparents				
Yes	12.5 (2.8)	0.91	48.6 (5.5)	0.236
No	13.0 (3.0)		48.0 (7.1)	
Connection with any other elderly person				
Yes	13.2 (2.8)	0.001	49.3 (6.0)	0.001
No	12.3 (2.9)		47.4 (6.0)	

^aIndependent sample t-test was used to evaluate statistical differences.
SD = standard deviation.

should be able to deliver dental care to elderly patients, so they need to study and learn from their educators [7].

The most incorrect answers were in the area related to social aspects of care of elderly patients, which is an area not emphasized in dental schools in the Islamic Republic of Iran [18]. The results were consistent with the research of Husna et al., which showed insufficient knowledge in behavioural aspects among the students [19]. Geriatric dentistry teaching in many schools now puts more emphasis on social problems related to ageing, as these problems can reduce or prevent effective treatment of older populations [20,21].

Not considering the importance of “demography of ageing”, “the ageing process” and “normal ageing of the oral cavity” in Iranian dental schools’ curricula leads to low scores on these issues [7].

The mean knowledge score of dental students about geriatric dental care differs significantly based on their attitude to old people other than their grandparents, but their sex, having living grandparents and having a close relationship with grandparents had no influence on their knowledge. It appears

that students’ knowledge in this field is more influenced by their education than by other factors [22].

Senior dental students’ attitudes toward elderly patients differed by sex. Female students exhibited more favourable attitudes toward the elderly than male students did. These results are in agreement with the findings of Moreira et al.’s study on dentists’ attitudes regarding ageing and the elderly [15]. In contrast, however, Nochajski et al. reported more negative attitudes among undergraduate female students than among males [23]. Other studies have shown no significant differences by sex in this regard [24,25].

Although a close relationship with grandparents did not influence the dental students’ attitudes toward the elderly, Soliz and Hardwood have shown the influence of close relationships with grandparents on grandchildren’s beliefs and values development. Frequent exposure to older grandparents may increase familiarity with the ageing process and the physical features of old age [26].

Having grandparents who are currently alive and considering other old people beside the grandparents

significantly influenced the dental students’ attitudes toward elderly people. This is consistent with a study of nursing students’ attitudes toward older adults [27]. The behaviour and values of health professionals could be influenced by their families’ or friends’ conditions, which can lead to more positive attitudes [15]. Knowledge and attitudes of dentists, as with those of other health care providers, may influence the quality of care provided to elderly patients [28]. Didactic courses can improve the knowledge of ageing in dental students, but some additional interventions appear to be necessary for changing attitudes. Emphasizing the positive aspects of older adults results in more positive attitudes toward elderly patients and may result in more positive behaviour by dental students [15]. In order to improve students’ attitudes, early exposure to elderly patients and having more frequent contact and interaction with them are necessary [23]. Closer relationships between students and educators who have positive attitudes toward elderly people can lead to more positive attitudes among students. However, faculty members have put little importance on geriatric dental issues, leading

to a lack of relevant academic training [17,22,23]. Further study is indicated on the attitudes and practices of educators as a factor influencing attitudes of dental students towards older adults.

Conclusion

Dental schools are responsible for preparing students to meet unique and

growing dental care needs of elderly patients. The level of knowledge and attitudes found in the current study suggests the need for improvement in educational programmes in schools of dentistry. These improvements are important for undergraduate students to attend to the care of older people more effectively. In these settings, the attitudes and knowledge of students will become the foundation for future

dentists' professional behaviour. Geriatric dental education should include knowledge and attitudes for dental care for older adults through interaction with older adults in different settings with the objective of modifying and promoting favourable dental student attitudes and knowledge toward elderly patients.

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