

Understanding Dental Students' Knowledge and Perceptions of Older People towards a New Model of Geriatric Dental Education; A Survey-Based Study in Riyadh and Jeddah

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Accepted 25th December, 2021.

Introduction: Providers' attitudes, whether positive or negative, influence the quality of their continuing relationship with patients. Respect, empathy, understanding, caring, and compassion for, as well as comfort with, older people seem to be critical qualities.

Materials and methods: This is a cross-sectional study conducted among dental students in Riyadh using an online survey. Dental universities in Riyadh and Jeddah were contacted and participants were requested to fill up the survey. **Results:** A total of 573 dental students participated in this study, of which 48% were males and 52% were females. Overall, female students were more comfortable around geriatric people who were frail, acutely grieving, lonely, chronically ill, and confused/depressed as compared to males, with these differences being statistically significant. **Conclusion:** There is a need to incorporate geriatric educational injection in the dental curriculum to improve the attitudes of students.

Keywords: geriatric health, dental education, dental students.

INTRODUCTION

Good oral health is a critical factor in maintaining general health in older people. As an individual ages, the incidence of oral conditions, such as tooth loss, root caries, periodontal attachment loss, and oral carcinomas, increases. Oral health can also be affected by pathologies and chronic conditions that often accompany the aging process, such as xerostomia and atrophy of the mucosa. Systemic diseases and/or their treatments can have a negative effect on oral health. Social concerns such as income, insurance benefits, community attributes, and access to transportation also influence the oral health of an individual and may affect access to and utilization of dental services by older people (Fabiano et al., 2005; Preshaw & Mohammad, 2005).

In the past, authors reported that geriatric dentistry education failed to change the attitudes of students towards elderly people significantly. There was even evidence that exposure of dental students to elderly people with poor oral health status initially resulted in a more negative attitude towards elderly people than before the exposure. It was also reported that students who had treated patients of all ages had

a more positive attitude towards elderly people, when compared to students who had treated only patients of 65 years and older (De Visschere et al., 2009; Moreira et al., 2012).

Oral health care for older adults can also be improved through dental education that emphasizes health promotion, chronic oral conditions, patients' perspectives, listening skills, and an understanding of cultural and generational issues. Dental educators also need to be alerted to the continuing necessity of countering students' potential negative biases. Providers' attitudes, whether positive or negative, influence the quality of their continuing relationship with patients. Respect, empathy, understanding, caring, and compassion for, as well as comfort with, older people seem to be critical qualities (Waldrop et al., 2009; Levy, Goldblatt & Reisine, 2013).

It is important to note that dental students are often under intense pressure to maximize patient contact to meet educational goals and clinical requirements necessary for graduation, especially in the third and fourth years of the curriculum. As a result, dental students may develop a

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negative attitude towards patients who have biopsychosocial issues that prevent desired compliance regarding scheduled appointments and planned treatment. The question must be raised 'Is our dental educational process itself a major factor in our students' development of a negative bias towards the elderly' (Anehosur & Nadiger, 2012; Nochajski et al., 2011).

A study conducted in Tehran, Iran assessed dental students' perceived barriers and perception towards geriatric dental care provision. It was observed that most of the participants (79%) did not have any training focused on geriatric dental care, and the vast majority (more than 83%) had no experience with geriatric dental care. The primary barriers to providing dental care to the elderly that dental students mentioned included insufficient knowledge of geriatric dental care and perceived lack of communication skills and self-confidence in managing elderly patients (Hatami et al., 2014).

AIMS OF THE STUDY

- To determine the level of knowledge among dental students regarding the oral health of geriatric patients.
- To compare the level of knowledge between dental students of different levels and genders.

MATERIALS AND METHODS

Study Design

This is a cross-sectional study conducted among dental students in Riyadh using an online survey.

Study Sample

Dental universities in Riyadh and Jeddah were contacted and participants were requested to fill up the survey.

Study Instrument

Online questionnaire was constructed consisting of questions related to personal and demographic data followed by questions linked to perception and attitude towards geriatric dental care.

Instrument Validity and Reliability

A pilot study was conducted by sending the survey to 20 participants and the data was inserted in SPSS version 22 to determine the reliability by using Chronbach's coefficient alpha (value: 0.769). The validity of the questionnaire was tested by sending it to experienced researchers in REU but no changes were made.

Statistical Analysis

Collected data was analyzed using SPSS version 22, where descriptive as well as inferential statistics was conducted. Comparisons between groups were made with the value of significance kept under 0.05 using Chi-Square test.

RESULTS

A total of 573 dental students participated in this study, of which 48% were males and 52% were females. According to their region, 64.2% were from Riyadh and 33.6% from Jeddah.

However, the remaining 2.2% of the participants from other cities were excluded from the study. Majority of the students belonged to Riyadh Elm University (46.7%), followed by Alfarabi college (19.9%), King Abdulaziz University (17.7%), King Saud University (10.7%), and others (5.1%). Participants were also grouped according to their dentistry level, which revealed 33.3% from 4th year, 45% from 5th year, and 21.6% from 6th year. Perceptions of students regarding geriatric patients' behaviours were inquired, which revealed that 42.8% of participants believed older patients have less absenteeism, 46.4% reported that majority of old people are socially isolated, 48.2% disclosed that depression is more frequent among elderly and 44.9% believed that old people listen to the instructions more attentively (Table 1).

We also inquired the participants about their comfort level when dealing with elderly people in various situations and circumstances. Merely 16.8% reported to be very comfortable with the frail and elderly, 16.2% were comfortable with elderly who were very emotional and tearful, 12.7% were comfortable with ones having chronic illnesses and 15% were comfortable dealing with elderly having physical disabilities. Reactions to certain elderly situations were also noted, which revealed that 46.9% of students would seek help from clinical instructors when encountering a mentally confused/depressed patient. Similar reactions were observed when inquired about dealing with patients having physical disabilities and suicidal patients (Table 2).

Gender comparisons of perception towards geriatric care were observed, which revealed that 39% of males believed that the life expectancy of men at age 65 is the same as women as compared to 25% females (p-value: .000). 58% of males reported that majority of old people are socially isolated as compared to 36% females (p-value: .000). Overall, female students were more comfortable around geriatric people who were frail, acutely grieving, lonely, chronically ill, and confused/depressed as compared to males, with these differences being statistically significant. However, when reporting the reactions to certain situations, male students showed a better attitude and insisted on talking to the patients if the elderly were confused/depressed or contemplating suicide (Table 3 & 4).

Comparing the responses according to dentistry level, 6th year students were believed to have a higher level of knowledge and preparedness when it comes to dealing with geriatric patients. 36% of 6th year students thought older persons who reduce their activity tend to be happier than those who remain active as compared to lower levels (p-value: .000). 4th year students reported geriatric patients having less absenteeism as compared to higher levels (p-value: .003). They also revealed that old people listen to their instructions more attentively.

DISCUSSION

This study aimed to determine the perceptions of dental students regarding the new geriatric health model in order to deal with their issues accordingly and eventually provide better oral care for them. Findings from our study show mixed information, with some students showing better attitudes in certain situations but a weaker character in other situations related to elderly people. It was noted from one of the findings that students seek support from their instructors whenever they encounter a challenging situation, showing that they are not ready to handle difficult patients by themselves.

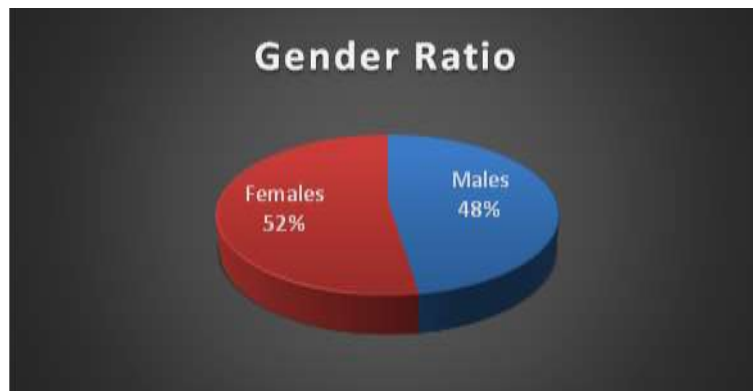


Figure 1: Gender ratio of the study participants

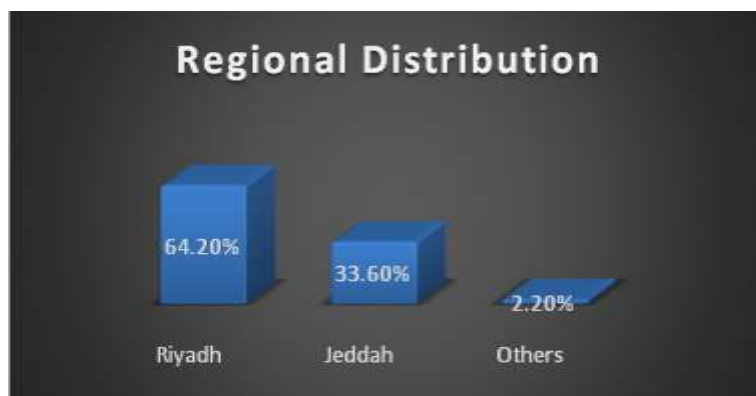


Figure 2: Regional distribution of study participants



Figure 3: Universities being utilized in the study

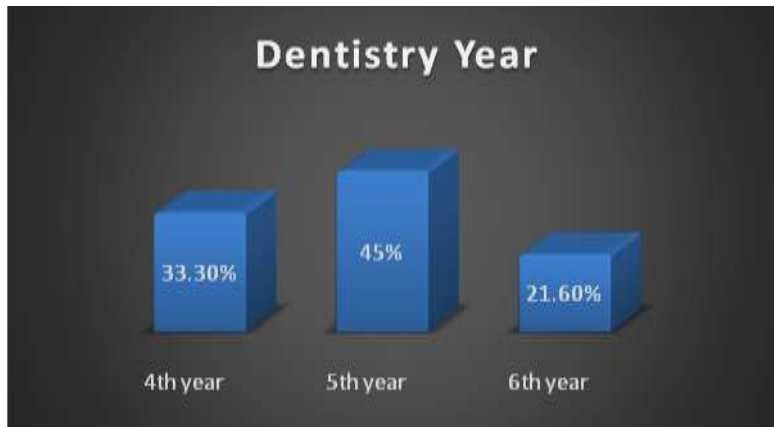


Figure 4: Distribution of participants according to dentistry level

Table 1: Participants' perception of problems associated with old age

Survey Questions	Response Frequencies
How do you rate your knowledge regarding old age/geriatric patients?	Poor: 20.2% Acceptable: 61.6% Good: 18.2%
Older persons (65+) have more chronic illnesses.	True: 59.5% False: 40.5%
The life expectancy of men at age 65 is the same as women's	True: 31.8% False: 68.2%
Older persons who reduce their activity tend to be happier than those who remain active	True: 40.5% False: 59.5%
Older persons (65+) have more acute illnesses.	True: 39.3% False: 60.7%
Older persons have less absenteeism (appointments)	True: 42.8% False: 57.2%
Older persons have more injuries	True: 41.5% False: 58.5%
Majority of old people are socially isolated	True: 46.4% False: 53.6%
Practitioners give low priority to aged	True: 40.1% False: 59.9%
Old people are seldom irritated or angry	True: 45.9% False: 54.1%
Depression is more frequent among elderly	True: 48.2% False: 51.8%
Old people listen to the instructions more attentively	True: 44.9% False: 55.1%

Table 2: Participants perceived comfort level in various situations when dealing an elderly patient

Survey Questions	Response Frequencies
How comfortable are you with Frail and elderly?	Not comfortable: 20.4% Somewhat comfortable: 62.7% Very comfortable: 16.8%
How comfortable are you with Acutely grieving?	Not comfortable: 26.4% Somewhat comfortable: 61.1% Very comfortable: 12.6%
How comfortable are you with someone lonely and isolated?	Not comfortable: 24.6% Somewhat comfortable: 59.3% Very comfortable: 16.1%
How comfortable are you with very emotional and tearful?	Not comfortable: 26% Somewhat comfortable: 57.8% Very comfortable: 16.2%
How comfortable are you with chronically ill and medically complex?	Not comfortable: 28.6% Somewhat comfortable: 58.6% Very comfortable: 12.7%
How comfortable are you with physically disabled?	Not comfortable: 27.2% Somewhat comfortable: 57.8%

	Very comfortable: 15%
What would you do with a patient who is mentally confused/depressed?	Talk with the patient: 38.4% Seek help from the clinical instructor: 46.9% Discuss with classmate: 5.2% Leave it as it as: 9.4%
What would you do with a patient who is physically declined?	Talk with the patient: 22.2% Seek help from the clinical instructor: 60.7% Discuss with classmate: 6.5% Leave it as it as: 10.6%
What would you do with a patient who is contemplating suicide?	Talk with the patient: 29% Seek help from the clinical instructor: 52% Discuss with classmate: 7.7% Leave it as it as: 11.3%
Do you think you need more information on how to manage and deal with elderly patients?	Yes: 54.6% No: 22.3% Maybe: 23%

Table 3: Association of gender with perception of problems associated with old age

Survey Questions	Males	Females	p-value
How do you rate your knowledge regarding old age/geriatric patients?	Poor: 27% Acceptable: 59% Good: 14%	Poor: 14% Acceptable: 64% Good: 22%	.000
Older persons (65+) have more chronic illnesses.	True: 83% False: 17%	True: 38% False: 62%	.000
The life expectancy of men at age 65 is same as women's	True: 39% False: 61%	True: 25% False: 75%	.000
Older persons who reduce their activity tend to be happier than those who remain active	True: 51% False: 49%	True: 31% False: 69%	.000
Older persons (65+) have more acute illnesses.	True: 50% False: 50%	True: 29% False: 71%	.000
Older persons have less absenteeism (appointments)	True: 57% False: 43%	True: 29% False: 71%	.000
Older persons have more injuries	True: 54% False: 46%	True: 30% False: 70%	.000
Majority of old people are socially isolated	True: 58% False: 42%	True: 36% False: 64%	.000
Practitioners give low priority to aged	True: 48% False: 52%	True: 33% False: 67%	.000
Old people are seldom irritated or angry	True: 57% False: 43%	True: 35% False: 65%	.000
Depression is more frequent among elderly	True: 61% False: 39%	True: 36% False: 64%	.000
Old people listen to the instructions more attentively	True: 58% False: 42%	True: 33% False: 67%	.000

Table 4: Association of gender with comfort level in various situations when dealing with an elderly patient

Survey Questions	Males	Females	p-value
How comfortable are you with Frail and elderly?	Not comfortable: 27% Somewhat comfortable: 63% Very comfortable: 10%	Not comfortable: 14% Somewhat comfortable: 62% Very comfortable: 23%	.000
How comfortable are you with Acutely grieving?	Not comfortable: 35% Somewhat comfortable: 60% Very comfortable: 5%	Not comfortable: 18% Somewhat comfortable: 62% Very comfortable: 20%	.000
How comfortable are you with someone lonely and isolated?	Not comfortable: 34% Somewhat comfortable: 56% Very comfortable: 10%	Not comfortable: 16% Somewhat comfortable: 62% Very comfortable: 22%	.000
How comfortable are you with very emotional and tearful?	Not comfortable: 32% Somewhat comfortable: 57% Very comfortable: 11%	Not comfortable: 20% Somewhat comfortable: 58% Very comfortable: 21%	.000
How comfortable are you with chronically ill and medically complex?	Not comfortable: 40% Somewhat comfortable: 56% Very comfortable: 4%	Not comfortable: 19% Somewhat comfortable: 61% Very comfortable: 21%	.000
How comfortable are you with physically disabled?	Not comfortable: 33% Somewhat comfortable: 56% Very comfortable: 10%	Not comfortable: 22% Somewhat comfortable: 56% Very comfortable: 19%	.000
What would you do with a	Talk with the patient: 52%	Talk with the patient: 26%	.000

patient who is mentally confused/depressed?	Seek help from the clinical instructor: 43% Discuss with classmate: 3% Leave it as it as: 2%	Seek help from the clinical instructor: 51% Discuss with classmate: 7% Leave it as it as: 16%	
What would you do with a patient who is physically declined?	Talk with the patient: 28% Seek help from the clinical instructor: 63% Discuss with classmate: 6% Leave it as it as: 3%	Talk with the patient: 17% Seek help from the clinical instructor: 58% Discuss with classmate: 7% Leave it as it as: 18%	.000
What would you do with a patient who is contemplating suicide?	Talk with the patient: 41% Seek help from the clinical instructor: 49% Discuss with classmate: 7% Leave it as it is: 4%	Talk with the patient: 18% Seek help from the clinical instructor: 55% Discuss with classmate: 8% Leave it as it is: 18%	.000
Do you think you need more information on how to manage and deal with elderly patients?	Yes: 68% No: 13% Maybe: 18%	Yes: 42% No: 31% Maybe: 27%	.000

Table 5: Association of dentistry level with perception of problems associated with old age

Survey Questions	4 th year	5 th year	6 th year	p-value
How do you rate your knowledge regarding old age/geriatric patients?	Poor: 35% Acceptable: 51% Good: 14%	Poor: 15% Acceptable: 76% Good: 9%	Poor: 9% Acceptable: 48% Good: 43%	.000
Older persons (65+) have more chronic illnesses.	True: 72% False: 28%	True: 45% False: 55%	True: 70% False: 30%	.000
The life expectancy of men at age 65 is same as women's	True: 44% False: 56%	True: 26% False: 74%	True: 25% False: 75%	.000
Older persons who reduce their activity tend to be happier than those who remain active	True: 54% False: 46%	True: 33% False: 67%	True: 36% False: 64%	.000
Older persons (65+) have more acute illnesses.	True: 48% False: 52%	True: 34% False: 66%	True: 37% False: 63%	.007
Older persons have less absenteeism (appointments)	True: 50% False: 50%	True: 35% False: 65%	True: 48% False: 52%	.003
Older persons have more injuries	True: 48% False: 52%	True: 34% False: 66%	True: 48% False: 52%	.005
Majority of old people are socially isolated	True: 57% False: 43%	True: 35% False: 65%	True: 55% False: 45%	.000
Practitioners give low priority to aged	True: 48% False: 52%	True: 30% False: 70%	True: 48% False: 52%	.000
Old people are seldom irritated or angry	True: 62% False: 38%	True: 36% False: 64%	True: 43% False: 57%	.000
Depression is more frequent among elderly	True: 57% False: 43%	True: 40% False: 60%	True: 53% False: 47%	.001
Old people listen to the instructions more attentively	True: 52% False: 48%	True: 39% False: 61%	True: 45% False: 55%	.021

Table 6: Association of dentistry level with comfort level in various situations when dealing with an elderly patient

Survey Questions	4 th year	5 th year	6 th year	p-value
How comfortable are you with Frail and elderly?	Not comfortable: 31% Somewhat comfortable: 52% Very comfortable: 17%	Not comfortable: 15% Somewhat comfortable: 74% Very comfortable: 10%	Not comfortable: 15% Somewhat comfortable: 54% Very comfortable: 31%	.000
How comfortable are you with Acutely grieving?	Not comfortable: 37% Somewhat comfortable: 50% Very comfortable: 13%	Not comfortable: 21% Somewhat comfortable: 72% Very comfortable: 6%	Not comfortable: 21% Somewhat comfortable: 54% Very comfortable: 25%	.000
How comfortable are you with someone lonely and isolated?	Not comfortable: 33% Somewhat comfortable: 53% Very comfortable: 14%	Not comfortable: 24% Somewhat comfortable: 68% Very comfortable: 8%	Not comfortable: 14% Somewhat comfortable: 52% Very comfortable: 35%	.000
How comfortable are you with very emotional and tearful?	Not comfortable: 37% Somewhat comfortable: 49% Very comfortable: 14%	Not comfortable: 21% Somewhat comfortable: 71% Very comfortable: 8%	Not comfortable: 19% Somewhat comfortable: 44% Very comfortable: 37%	.000
How comfortable are you with	Not comfortable: 39% Somewhat comfortable: 51%	Not comfortable: 23% Somewhat comfortable: 70%	Not comfortable: 24% Somewhat comfortable: 48%	.000

chronically ill and medically complex?	Very comfortable: 10%	Very comfortable: 7%	Very comfortable: 28%	
How comfortable are you with physically disabled?	Not comfortable: 39% Somewhat comfortable: 49% Very comfortable: 12%	Not comfortable: 24% Somewhat comfortable: 68% Very comfortable: 8%	Not comfortable: 16% Somewhat comfortable: 50% Very comfortable: 34%	.000
What would you do with a patient who is mentally confused/depressed ?	Talk with the patient: 42% Seek help from the clinical instructor: 45% Discuss with classmate: 8% Leave it as it as: 5%	Talk with the patient: 31% Seek help from the clinical instructor: 59% Discuss with classmate: 3% Leave it as it as: 6%	Talk with the patient: 48% Seek help from the clinical instructor: 25% Discuss with classmate: 5% Leave it as it as: 23%	.000
What would you do with a patient who is physically declined?	Talk with the patient: 27% Seek help from the clinical instructor: 53% Discuss with classmate: 12% Leave it as it is: 8%	Talk with the patient: 16% Seek help from the clinical instructor: 74% Discuss with classmate: 4% Leave it as it is: 6%	Talk with the patient: 27% Seek help from the clinical instructor: 45% Discuss with classmate: 4% Leave it as it is: 23%	.000
What would you do with a patient who is contemplating suicide?	Talk with the patient: 31% Seek help from the clinical instructor: 52% Discuss with classmate: 10% Leave it as it is: 7%	Talk with the patient: 26% Seek help from the clinical instructor: 60% Discuss with classmate: 5% Leave it as it is: 9%	Talk with the patient: 33% Seek help from the clinical instructor: 35% Discuss with classmate: 10% Leave it as it is: 22%	.000
Do you think you need more information on how to manage and deal with elderly patients?	Yes: 62% No: 13% Maybe: 25%	Yes: 49% No: 36% Maybe: 15%	Yes: 55% No: 8% Maybe: 37%	.000

Similar findings were reported by Souza et al. (2018) among the students in Brazil where they looked upon their teachers and instructors on how to manage elderly patients.

It can be observed from our study findings that the senior dental students looked significantly more confident and comfortable when around geriatric people having various conditions under certain situations. These differences among the levels of dental students were notable and statistically significant. As a matter of fact, another similar sort of study produced identical results among Indian dental students when they compared their responses between the 4th and 5th years. They also revealed better attitudes and perceptions among senior dental students as compared to juniors (Thampan, Sk & James, 2020).

There is a need of incorporating the notion among students that it is imperative to build positive relationships with elderly people in order to successfully achieve desired outcomes. Gaining trust and understanding patients' needs are the initial steps towards it. Students in our study lack the intent and motivation to do so, which is reflected by their responses as majority of them either are not comfortable at all or moderately comfortable when around a geriatric person. A study conducted by Del Rosario et al. (2019) explained how improved dental education can make patient-dentist relationships better when it comes to elderly people.

During the undergraduate course, students' first contact with an older person usually occurred at the prosthetic clinic and was limited to that experience; therefore, diversification of learning scenarios is highly recommended. Insufficient time in the curricula and exclusively theoretical modules do not allow students to experience typical specificities of elderly patients. Students must understand the ageing process in relation to oral health conditions, care, and the management of older people. Comprehensive gerontogeriatric contents and diverse practical activities allow students undertaking professional training to attend to elderly patients properly in different contexts and health situations Del Rosario et al. (2019).

CONCLUSIONS

- Participants' perception of problems associated with old age was satisfactory.
- Participants perceived comfort level in various situations when dealing with an elderly patient was unsatisfactory and require attention.
- Females showed better empathy towards geriatric people, but males exhibited superior reactions towards elderly issues in certain situations.
- A higher level of dental students was observed to be more confident as compared to a lower level of students.
- There is a need to incorporate geriatric educational injection in the dental curriculum to improve the attitudes of students.

CONFLICT OF INTEREST

There is no conflict of interest among the authors for this publication.

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