

## Do Dentists and Dental Students have the Appropriate Attitudes and Ability to Practice for Geriatric Patients in Saudi Arabia?

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### Abstract

**Objectives:** The objectives of this study were to identify the indications for hysterectomy and the surgical approaches and to describe the prognosis.

**Methods:** This was a descriptive longitudinal study with a 4-year retrospective component (February 1, 2017 to January 31, 2021) and a 6-month prospective component (February 1, 2021 to July 31, 2021). The retrospective component focused on the records of patients who underwent a hysterectomy and the prospective part on patients who underwent a hysterectomy in the department during the study period. The study focused on the socio-demographic characteristics of the patients, the indications, the surgical approaches, the types of hysterectomy and the prognosis.

**Results:** Hysterectomy accounted for 1.3% of all surgeries performed in the department during the study period. It mainly concerned women aged 40 - 49 (37.5%), married (77.4%), uneducated (68.3%), housewives (58.7%), grand multiparas (37.5%) and postmenopausal (57.2%). Indications were dominated by uterine leiomyoma (45.7%). The abdominal route was the most used (85.1%). Total hysterectomy was the most practiced (91.8%). The procedure most frequently associated with hysterectomy was adnexectomy (61.1%). Anemia was the most common complication (13.9%) and the case fatality rate was 4%.

**Conclusion:** hysterectomy is a common practice in the department. The most common indication is uterine leiomyoma and the abdominal route was the most used. The most common complication was anemia.

**Keywords:** Hysterectomy; Prognosis; Conakry; Ignace Deen

### Introduction

During the last several decades, the proportion of the world's population that is 65 and older has increased faster than at any time in history [1]. Given the current trend, it is expected that this segment of the population will triple by 2050, reaching 2 billion [2]. Therefore, countries should be prepared for the aging phenomenon and adopt appropriate policies to meet their health needs.

Getting older is associated with a higher incidence of some chronic diseases, most of which have been proven to have oral manifestations that can result in limitations to chewing and swallowing [3]. In general, oral conditions are usually complicated in older people due to systemic diseases and medications, which makes this age range a special group in need of specific preventive and curative oral health care [4].

Based on analysis of the data obtained from the 2015 - 2016 cycle of the National Health and Nutrition Examination Survey (NHANES), it was reported that out of the 10 systemic diseases investigated, 6 were associated with oral health outcomes, including diabetes, coronary heart disease, congestive heart failure, high blood pressure, asthma, and liver disorders [5].

Accreditation standards of dental education in dental schools require that students be sensitized to underserved populations' needs. In US dental schools, different courses have been developed, mostly in the form of community-based education, to reach these goals [6]. However, studies have revealed that most dental schools in other countries have not sufficiently covered geriatric dental education in their curriculum [7].

Lack of access to dental services as a result of financial constraints and lack of family support are other common problems that could potentially jeopardize the oral health of elderly people over 65 [8]. In addition, difficulties in performing proper oral hygiene and access to oral health care as a result of physical or mental disabilities can impact upon oral health in older people [9].

Therefore, dental teams need to be equipped with specific knowledge and skills to provide the appropriate dental care [10]. Poor oral health and tooth discomfort may lead to further complications such as reduced eating capacity, weight reduction, speech impairment, hydration issues, and diminished views of personal attractiveness, all of which can contribute to a lack of interest in social contacts [11-14]. In Saudi Arabia, 69.06% of the population need some type of prosthetic dental care, and the majority of those requirements were inadequate among the elderly [15]. Low oral health related quality of life has been reported among senior Saudi Arabians however, the presence of a dental prosthetic treatment had a positive influence on oral health related quality of life [16].

Of noted, studies conducted among dentists in different parts of the world have indicated that their knowledge is regularly unsatisfactory [17,18]. Nearly 20% of the graduated dental students in Belgium reported that they were not well-prepared to provide care to older people due to lack of enough knowledge and/or skills [19]. A previous study in Iran found that the level of knowledge was average among dental graduates [4].

Formation of attitudes towards older people is considered as a key component in the development of professional behaviors and practical patterns of dental students [20]. Attitudes are defined as learned predispositions that steer people's responses in a consistently favorable or unfavorable manner. However, as previously reported dentists and senior students sometimes do not display positive attitudes towards providing dental care to older people [21]. Previous research has shown that about 37% of senior dental students were unwilling to provide care in the future towards elderly patients [22]. This finding was also reported in another study conducted by Major, *et al.* which showed that for those who anticipated a willingness to treat elderly patients, their attitudes became more negative as students progressed through their predoctoral education [23]. According to a study conducted in Iran, most dentists (60%) favor treating young patients compared to elderly patients [4]. Around 30% of dentists believe they lack the training and expertise necessary to look after elderly patients with compromised medical conditions [4]. Furthermore, according to 40% of dentists, elderly dental care is not sufficiently taught in dental schools [4]. In contrast, one study conducted in Indonesia found that females and dentists with aged relatives had more positive attitudes towards geriatric patients [24].

A recent study in Saudi Arabia among 100 dental students and interns from Almajmmah, Saudi Arabia, reported that the participants had low levels of knowledge and lacked a positive attitude about providing primary oral health care to older patients [25]. However, to the best of our knowledge, there has been no study investigating the topic in relation to different cities in Saudi Arabia.

Given the growing population of older people in Saudi Arabia and the scarcity of data, this study aimed to assess the attitudes and practices of dentists for geriatric patients in Saudi Arabia.

Materials and Methods

A cross-sectional survey of dentists and dental students was conducted in Saudi Arabia from May to June 2023. The research data were collected via a 30-item questionnaire. The first six questions collected demographic information. Next, there were 17 attitude questions answered on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The attitude section was summed, after recoding negative items, to give a total score of attitudes that ranged from the lowest score of 17 to the highest attitude score of 85. The last section had seven abilities to practice questions about geriatric patients and dealing with them. The total score of the ability to practice section is the sum of the section’s items, which ranged from a low of 7 to a high of 35. The questions assessing attitudes and ability to practice were based on past research [4].

The needed sample size of 382 people was computed using an alpha of 0.05, an expected prevalence of 50%, and a confidence level of 95%. To locate study participants, a convenience sample approach was employed to disseminate the online survey to users of social media sites, including Snapchat, Twitter, WhatsApp, TikTok, Instagram, and others. Participants were dentists or dental students who reside in Saudi Arabia and were required to agree to and sign the study’s informed consent declaration before answering the questions. Those who did not sign the informed consent were not permitted to participate. To protect respondents’ privacy and the confidentiality of their data, each questionnaire was assigned an identifying number. The study was approved by Taibah University’s institutional review board with the number TUCDREC/290323/IAbdo.

The data from the study were analyzed using SPSS software (IBM Corp., Armonk, NY). We computed the mean and SD using descriptive statistics. The data were examined and connections between the variables evaluated using a t-test.

Results

Demographic data

In total, 403 valid questionnaires were collected for this study. Participants had a mean (m) age of 28.47 years, with standard deviation (SD) of 5.15. Demographic data are shown in table 1.

Table with 4 columns: Variable, n, and %. Rows include Gender (Male/Female), Marital status (Married/Non-married), and Qualification (Student/Intern/Bachelor's degree/Specialist/Consultant).

Region in Saudi Arabia	Western	176	43.67
	Central	107	26.55
	Southern	51	12.66
	Eastern	52	12.90
	Northern	17	4.22
Nationality	Saudi	356	88.34
	Non-Saudi	47	11.66

Table 1: Participants' demographic data.

Participant attitudes toward geriatric patients

The attitudes of dentists toward older patients are presented in figure 1, representing the participant answers to the 17 attitude questions. After the attitude questions were calculated as numerical values in a score from 1 to 5, t-test was used to assess any relationship for each item with gender and qualification, as displayed in table 2. After recoding the negative items, the total score of attitudes had a mean of 55.28 (SD = 6.94). Using t-test, the total attitude score was statistically significantly higher among males (p = 0.005, m = 56.66, SD = 8.26) than females (m = 54.47, SD = 5.92). In addition, the total attitude score was significantly higher among dentists (p < 0.001, m = 56.76, SD = 7.36) than dental students/interns (m = 52.80, SD = 5.37).

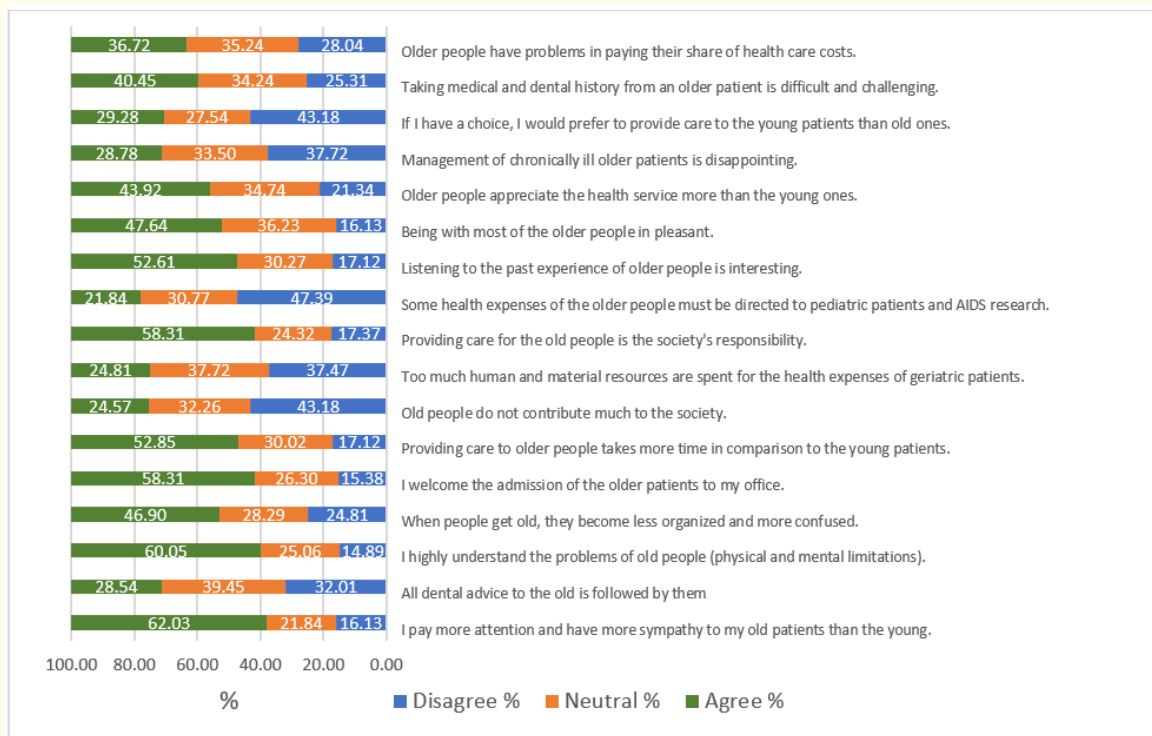


Figure 1: Attitudes of dental professionals toward older patients.

Statement	Gender			Qualification		
	Male	Female	p-value	Student/intern	Dentist	p-value
Older people have problems with paying their share of health care costs.**	2.96 ± 1.27	3.22 ± 1.03	0.032*	3.23 ± 0.98	3.07 ± 1.21	0.153
Taking medical and dental histories from an older patient is difficult and challenging.**	3.14 ± 1.18	3.29 ± 1.05	0.187	3.28 ± 0.89	3.21 ± 1.21	0.495
If I have a choice, I prefer to provide care to younger patients rather than older ones.**	2.51 ± 1.29	2.82 ± 1.25	0.023*	3.05 ± 1.13	2.5 ± 1.31	< 0.001*
Management of chronically ill older patients is disappointing.**	2.66 ± 1.18	2.98 ± 1.1	0.007*	3.01 ± 0.94	2.77 ± 1.23	0.031*
Older patients appreciate the health service more than young ones.	3.39 ± 1.32	3.31 ± 1.02	0.535	3.18 ± 0.99	3.44 ± 1.21	0.019*
Being with most of the older patients is pleasant.	3.41 ± 1.14	3.49 ± 1	0.473	3.29 ± 0.91	3.56 ± 1.12	0.01*
Listening to the past experience of older patients is interesting.	3.49 ± 1.29	3.57 ± 1.05	0.511	3.32 ± 1.02	3.67 ± 1.19	0.002*
Some health expenses of older patients must be directed to pediatric patients and AIDS research.**	2.36 ± 1.22	2.65 ± 1.21	0.023*	2.76 ± 1.14	2.41 ± 1.26	0.004*
Providing care for older people is society's responsibility.	3.78 ± 1.31	3.68 ± 1.16	0.448	3.33 ± 1.05	3.94 ± 1.25	< 0.001*
Too much human and material resources are spent for the health expenses of geriatric patients.**	2.68 ± 1.23	2.84 ± 1.08	0.18	2.88 ± 1.1	2.72 ± 1.16	0.159
Older people do not contribute much to society.**	2.39 ± 1.18	2.78 ± 1.16	0.001*	2.94 ± 1.1	2.46 ± 1.19	< 0.001*
Providing care to older patients takes more time than younger patients.**	3.43 ± 1.25	3.58 ± 1.11	0.247	3.25 ± 1.08	3.69 ± 1.18	< 0.001*
I welcome the admission of older patients to my office.	3.7 ± 1.27	3.69 ± 1.08	0.895	3.34 ± 1.04	3.9 ± 1.17	< 0.001*
When people get older, they become less organized and more confused.**	3.1 ± 1.26	3.47 ± 1.13	0.004*	3.24 ± 1.02	3.39 ± 1.28	0.195
I greatly understand the problems of older people (physical and mental limitations).	3.67 ± 1.17	3.63 ± 1.01	0.72	3.44 ± 0.98	3.76 ± 1.11	0.003*
All dental advice is followed by older patients.	2.84 ± 1.1	2.99 ± 1.02	0.197	3.01 ± 1	2.89 ± 1.08	0.286
I pay more attention to and have more sympathy for my older patients than younger ones.	3.6 ± 1.25	3.75 ± 1.06	0.229	3.53 ± 1.06	3.79 ± 1.17	0.021*

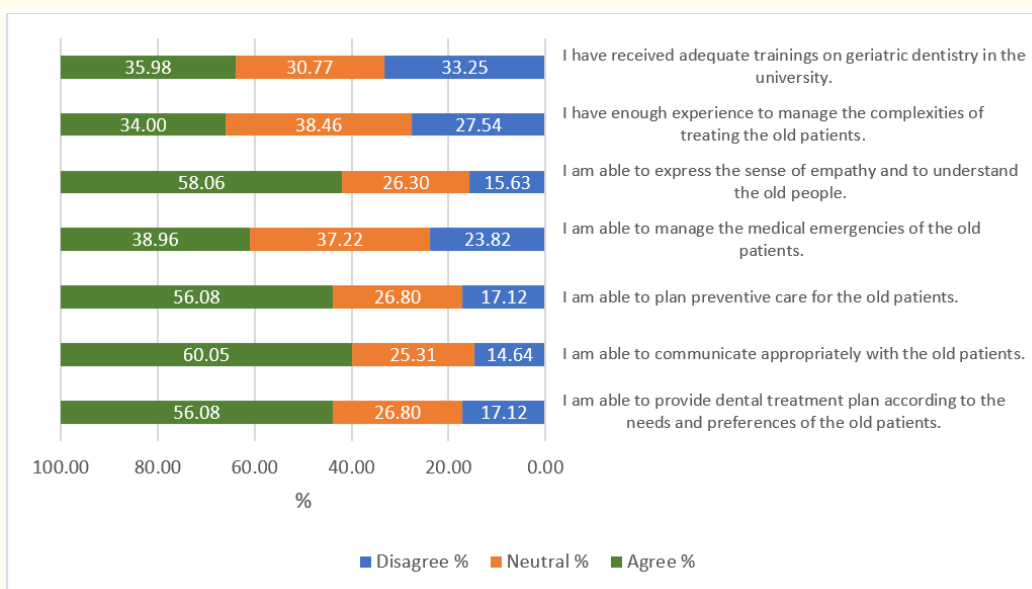
**Table 2:** Attitudes of dental professionals toward older patients in relation to gender and qualifications.

\*Statistically significant differences.

\*\*Negative statements that were recorded in the statistical analysis when the score was totaled.

**The dental professionals’ ability to practice the older people toward geriatric patient care**

The results of self-reporting ability to practice of participant toward geriatric patient care were showing in figure 2. When the ability to practice questions were calculated as numerical values from a score from 1 to 5, the values were tested using t-test against gender and qualification for each item, as displayed in table 3. The total score of ability to practice was (m = 23.84, SD = 6.24). Using a t-test, the total score of ability to practice was not statistically difference against gender (p = 906). The total ability to practice score was significantly higher among dentists (p = 0.01, m = 24.45, SD = 6.35) than dental students/interns (m = 22.83, SD = 5.93).



**Figure 2:** Dentists’ self-reported ability to practice for older patients.

Statement	Gender			Qualification		
	Male	Female	p-value	Student/intern	Dentist	p-value
I received adequate training on geriatric dentistry at the university.	3.09 ± 1.09	3.04 ± 1.22	0.615	3.23 ± 1.03	2.96 ± 1.24	0.02*
I have enough experience to manage the complexities of treating older patients.	3.17 ± 1.1	3.1 ± 1.04	0.524	3.1 ± 0.98	3.14 ± 1.11	0.709
I am able to express a sense of empathy and to understand the older patients.	3.59 ± 1.22	3.64 ± 1.04	0.684	3.36 ± 1.06	3.79 ± 1.1	< 0.001*
I am able to manage the medical emergencies of older patients.	3.25 ± 1.22	3.21 ± 1	0.746	3.19 ± 1.05	3.25 ± 1.11	0.558
I am able to plan preventive care for older patients.	3.59 ± 1.19	3.58 ± 1.09	0.977	3.34 ± 1.03	3.73 ± 1.16	< 0.001*
I am able to communicate appropriately with older patients.	3.7 ± 1.14	3.66 ± 1.05	0.746	3.34 ± 1.04	3.87 ± 1.06	< 0.001*
I am able to provide a dental treatment plan according to the needs and preferences of older patients.	3.51 ± 1.22	3.59 ± 1.08	0.502	3.29 ± 1.06	3.72 ± 1.15	< 0.001*

**Table 3:** Dental professionals’ ability to practice for older patients in relation to gender and qualifications.

\*Statistically significant differences.

### Discussion

Our study aimed to evaluate the attitudes and abilities to practice of dentists and dental students in terms of providing oral health care for geriatric patients in Saudi Arabia. In general, the attitude and ability to provide oral health care for geriatric patients was moderately positive. In terms of attitude, males and dentists had significantly higher scores for attitude than females and dental students/interns. In terms of ability to provide the needed treatment, dentists again had significantly higher scores than dental students/interns, but scores by gender were not statistically different.

Our study showed that dental students and dentists had a positive attitude, which agrees with prior studies conducted in Brazil [26] and Indonesia [24]. In fact, the mean of total attitude score ( $m = 55.8$ ,  $SD = 6.1$ ) was very similar to the Iranian study from which we adapted the questionnaire [4]. This gives a good indication that there is a foundation of favorable attitudes toward elderly patients in different countries among dentists and dental students. This is essential because it establishes better professional behavior and practice in dentistry worldwide [20].

Additionally, 60.05% of our participants understand the physical and mental limitations of elderly patients, which is supported by an Indonesian study [24] that reported 74.5% of dental students agreed that elderly patients become less structured and proportionately more confused with aging. Being aware of such aging problems, which are linked to physical, cognitive, and functional changes, is important for understanding and providing dental care to older people. In fact, these issues among geriatric patients can make choosing a suitable path of treatment and gaining informed consent more challenging [27], particularly in patients with dementia, who rarely heed dental advice [34].

There are ethical concerns and moral dilemmas around patients with behavioral-neuropsychiatric challenges, including geriatric patients, which requires good behavior management and better attitudes among dental professionals [27]. This was supported by our results indicating that 58.31% of respondents welcome the admission of older people to their dental practice. This result is higher than the results for the same item in the Iranian study, which were 44.1% who strongly agreed or agreed [4]. This difference is not large, and it might be due to cultural differences, which impact individual experiences and attitudes [28].

In our study, males showed a significantly more positive attitude toward elderly patients than did females generally, which is in contrast to previous studies conducted in Iran [29] and Brazil [26], in which researchers speculated that women had higher attitude scores because of their better capability for empathy and feeling. Previous studies conducted in the United States, Germany, India, and Iran [4,18,20,30] found no significant difference between males and females. It should be highlighted that in our study, while there is statistically significant, the total score difference is not large and might not be clinically significant [31]. Thus, our result might be similar to the majority of studies [4,18,20,30] and the reason for the difference in the other studies may be due to different tools used for measurement. Nevertheless, our results cannot be explained by our current data, and more research is needed to investigate this result in more depth.

Dentists also had higher attitude scores than dental students and interns. This might be because dental students have less knowledge about geriatric care, as shown in a previous study in Saudi Arabia [25]. This result might also be due to dentists having more experience and encountering a greater number of cases, making them more confident about treating geriatric patients.

One of the interesting results regarding attitude was that there were some deficient areas, such as 40.45% of dental professionals having some difficulty in taking histories from geriatric patients. This was also noted in the Iranian study as a barrier and negative attitude [4]. Identifying such a problem can direct the fabrication of new models to facilitate the proper gathering of information from geriatric patients [32].

### Ability to practice in relation to geriatric patients

The support of geriatric patients can be optimized by providing specialized care that addresses their unique needs, including preventive care and treatment plans, management of older people's emergencies, and communication and emotional skills. This viewpoint is supported by our results, which indicated that 56.08% to 60.05% of dental professionals in Saudi Arabia reported an ability to communicate appropriately, express a sense of empathy for understanding older patients, and provide a dental treatment plan, as well as preventive care, to elderly patients according to the individual patient's need. The results for the same items in the previous study in Iran were from 42.9% to 73.6% which is similar to our results, but with a wider range.

Furthermore, dentists reported greater ability to serve geriatric patients in their practice than did students and interns, despite more than one-third of dental students and interns affirming that they had obtained sufficient geriatric dentistry training at their university. It seems that the theoretical education about treating geriatric patients that has been reported in many studies [33] might not be influencing the self-perceived ability to deal with older patients in dentistry. It is also possible that dentists are more likely to have a great deal of expertise in addressing the specific needs of this population because it was required for their practice. This was reported in studies from Belgium and Netherlands, where one-third of dentists reported that many of their patients are older than 65 years [34].

Our findings are in line with a previously conducted study [25] among Saudi dental students that revealed educational programs enhanced knowledge but had minimal influence over ability to care for elderly patients, in general, which is consistent with other published studies conducted with medical residents [35]. Thus, we recommend an addition to formal education that encourages dental students and dentists to gain practical experience by volunteering at nursing homes or other facilities that serve the elderly. This can provide valuable hands-on experience and help to build empathy and understanding about the unique needs of geriatric patients.

It is important to acknowledge some limitations of the present study because participation in this observational cross-sectional study depended on being available and willing to do so. Additionally, dentists who chose to take part in the study might have a greater interest in or care for more elderly patients than dentists who did not choose to participate. Furthermore, the study relied on self-reported data, which may be subject to social desirability bias. Future research could employ objective measures and include a larger and more diverse sample to ensure broader generalizability.

### Conclusion

In summary, our participants generally had a positive attitude and ability to practice for older patients; however, certain statements indicated worse attitudes and practices for geriatric patients that were unsatisfactory. It is recommended that a study be conducted to analyze the impact of practical continuing education programs on improving the attitudes and perceived ability of dental students and dentist with regard to geriatric patients.

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### Conflicts of Interest

The authors declare that they have no conflicts of interest to declare.

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This study has not received any external funding.

### Ethics Statement

- The study was approved by Taibah University's institutional review board with the number TUCDREC/290323/IAbdo.
- Participants were required to agree to and sign the study's informed consent declaration before answering the questions.



### Data Availability

The datasets used and/or analyzed during the current study are available from the corresponding author upon reasonable request.

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