Assessing the Need for Anesthesia and Sedation Services in Kuwaiti Dental Practice

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The objective of this study was to examine the public health relevance of the prevalence of dental fear in Kuwait and the resultant barrier that it creates regarding access to dental care. The study analysis demonstrated a high prevalence of dental fear and anxiety in the Kuwaiti population and a perceived need for anesthesia services by dental care providers. The telephone survey of the general population showed nearly 35% of respondents reported being somewhat nervous, very nervous, or terrified about going to the dentist. In addition, about 36% of the population postponed their dental treatment because of fear. Respondents showed a preference to receive sedation and anesthesia services as a means of anxiety relief, and they were willing to go to the dentist more often when such services were available. People with high fear and anxiety preferred to receive some type of medication to relieve their anxiety. In conclusion, the significance and importance of the need for anesthesia services to enhance the public health of dental patients in Kuwait has been demonstrated, and improvements are needed in anesthesia and sedation training of Kuwaiti dental care providers.

Key Words: Needs assessment; Sedation; Kuwait; Dental anesthesia; Anxiety.

Traditionally, the practice of dentistry has an enduring association with fear and apprehension. These feelings of anxiety continue despite advances in dental techniques. It has been reported that 23 million people with dental fear were more willing to see a dentist if a form of sedation was offered.¹ Consequently, the use of this modality is important in the provision of dental treatment. In fact, a current survey of recent US dental graduates reported that 93.7% perceived a need for sedation services within their respective patient population.² The prevalence of fear

in dentistry represents a barrier to routine and expanded dental care that is becoming a global concern.²⁻⁷ Therefore, a need does exist for sedation services within dentistry that spans the international atmosphere. The ability to care for the segment of the patient population with fear and anxiety of dental treatment has become an important component of dental practice. In this study, we examined the relationship between dental anxiety and the use of pain and anxiety control measures in the general population of the Kuwait. The objectives were to determine if the Kuwaiti population and its dental care providers perceive a need for anesthesia and sedation care during dental treatment.

METHODS

The study was designed as a sectioned survey to include a prospective questionnaire-based survey of ac-

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Table 1. Demographic Characteristics of the Sample

Characteristics	No. (%) of Respondents
Total respondents	403*
Education level	
High school	134 (34.5)
2-Year college	80 (20.6)
4-Year college	130 (33.5)
Post graduate	44 (11.3)
Sex	
Male	161 (40.0)
Female	242 (60.0)

* The sum of all characteristics is not 403 because some subjects did not complete the entire survey.

tive dental health care providers and a national telephone survey for the general public of Kuwait.

General Population Survey

The survey was developed based on similar studies relating to fear and anxiety in dentistry used in the United States and Canada.^{3,4} The survey consisted of closed-ended questions focusing on 4 categories: demographic characteristics, frequency of use of oral health services, anxiety and fear towards dentistry, and preference of using anti-anxiety therapy before seeking oral health services. These categories were chosen as the focus of the study in order to assess the prevalence of dental anxiety in the population. In addition, direct questions assessing public attitudes toward the use of sedation and anesthesia as anxiety reduction tools were included in the survey.

A random digit-dialing telephone survey of the general Kuwaiti population was used to complete survey administration. Telephone numbers were dialed randomly, using investigator(s) and/or research staff at Kuwait University Faculty of Dentistry, between the hours of 9:00 AM and 8:00 PM, ensuring the sample was unbiased with respect to sex and employment status. The sample was collected from the 6 different Kuwaiti governorates to ensure a good representation of the general population. In statistical terms, a population of 200,000 is considered to be infinite and a sample of 386 people is required to achieve a representative sample of the population using the method of this study.^{8,9}

Dental Health Care Providers

A total of 100 questionnaires was distributed from Kuwait University Faculty of Dentistry, via facsimile, standard mail, or guided mail, equally among dental health care providers within the 6 Kuwaiti Governorates. A

Figure. Fear and anxiety toward dental treatment.

list of Kuwaiti dental practitioners was obtained through Kuwait University Faculty of Dentistry and Kuwait Governmental Affairs. The questionnaires consisted of closed-ended questions focusing on 3 categories: practice demographics, perceived need for sedation anesthesia, and sedation training.

RESULTS

General Population

During the general population survey, there were 458 people who received calls to their home landline. Of the 458, 18 refused to participate. In addition, 37 calls were answered by people under the age of 18 and were excluded from participation, as per the protocol's exclusion criteria. The completed interviews (91.6% participation rate) were conducted by a staff member from the Kuwait University Faculty of Dentistry and a trained student in social studies from Kuwait University. The small, 8.4%, nonresponse rate is unlikely to bias this study's results because of the method used.⁹

Table 1 summarizes the demographic characteristics of the Kuwaiti General Population sample. Of the 403 respondents, 74 (19.2%) reported visiting the dentist every 6 months; 112 respondents (29.1%) reported visiting the dentist once a year; 142 (37.4%) reported visiting the dentist less than once a year; and 55 respondents (14.4%) reported never having visited the dentist.

Anxiety and fear levels toward dental treatments are summarized in the Figure. They ranged from not nervous to extremely nervous or terrified, with about 14% falling in the category of being extremely nervous or terrified. Twenty-nine percent canceled or postponed

Table 2. Relationship Between Level of Fear/Anxiety and Frequency of Dental Visits, Missed Dental Appointments, and the Use of Sedative Drugs

Factor	No. (%) of Respondents		P Value
	High Fear/Anxiety*	Low Fear/Anxiety†	
No. of dental visits			<.05
Every 6 months	53 (26.5)	20 (16.1)	
Once a year	76 (38.0)	35 (28.2)	
Less than once a year	71 (35.5)	69 (55.6)	
Missed dental appointment due to fear			<.01
Yes	221 (89.5)	48 (36.1)	
No	26 (10.5)	85 (63.9)	
Would go to the dentist more often if given a drug to reduce anxiety/fear			<.01
Yes	126 (51.2)	26 (19.5)	
No	120 (48.8)	107 (80.5)	
Would accept general anesthesia as a means of anxiety/fear control			<.01
Yes	174 (70.7)	49 (36.8)	
No	72 (29.3)	84 (63.2)	

* The high fear/anxiety group consisted of subjects reporting that they are nervous or are very nervous/terrified about going to the dentist.

† The low fear/anxiety group consisted of subjects reporting that they are not nervous or are slightly nervous.

their appointment due to fear of dental treatment. Of 384 respondents, 229 (60%) indicated that they were willing to go to the dentist if they would receive medication to reduce their anxiety. The use of general anesthesia as a means of anxiety relief was questioned in this survey; 156 of 384 (41%) showed interest in receiving general anesthesia with their dental treatment.

Statistically significant associations among fear and anxiety associated with dental care are shown in Table 2. Patients with high anxiety levels reported having higher cancellation and delay rates of dental appointments when compared to patients with low or no dental anxiety levels. The high anxiety group showed significantly more interest in going to the dentist if a drug were administered to reduce anxiety prior to dental treatment. They also showed an interest in receiving general anesthesia as a means of anxiety reduction. In contrast, receiving a drug to reduce anxiety was not an influencing factor on seeking dental treatment for the low anxiety group. Women were 3 times more likely to have high levels of anxiety and fear compared with men. Education levels were also of significance, people with a high school education were about 1.5 times more likely to be in the high anxiety group than people with higher levels of education.

Dental Health Care Providers

One hundred practitioners were asked to complete the Kuwaiti Dental Health Care Providers Survey. Of the

100 questionnaires distributed, 73 surveys were returned. The completed questionnaires (73.0% participation rate) were evaluated by a staff member from the Kuwait University Faculty of Dentistry and a trained student in social studies from Kuwait University, and then forwarded to the University of Pittsburgh for database implementation and statistical analysis.

A fairly even distribution of dental practice types was obtained during the course of the study. Of those responding to the survey, 12 (16.4%) were general practitioners, 14 (19.2%) were pediatric dentists, 10 (13.7%) were periodontists, 11 (15.1%) were orthodontists, 6 (8.2%) were prosthodontists, 7 (9.6%) were endodontists, 9 (12.3%) were oral surgeons, and 4 (5.5%) reported an unidentified dental specialty practice.

Table 3 demonstrates the response of Kuwaiti dental providers to the survey questionnaire. The majority of practitioners (75.3%, $n = 55$) expressed a need for anxiety control within their individual practices. In addition, 52 (71.2%) respondents answered "Yes" when

Table 3. Survey Responses of Kuwaiti Dental Providers

Subject	Yes	No
Perceive a need for anxiety control in dental practice	75.3%	24.7%
Anxiety control is essential for dental practice	71.2%	28.8%
Received appropriate pain and anxiety control training and education	31.5%	68.5%
Perceive certain limitations to dental practice because of inadequate availability of anxiety and pain control	47.9%	52.1%

asked if anxiety control was essential to the field of dentistry. However, only a minor percentage (31.5%, $n = 23$) of dental practitioners surveyed deemed that they had received proper training in the field of sedation anesthesiology. Of interest was the response by the practitioners to feeling restricted to certain dental procedures because of limitation of pain control offered to patients. The data demonstrate a lack of statistical significance ($P > .05$) between the respondents, with 47.9% ($n = 35$) stating that, yes, they do perceive a limitation compared to 52.1% ($n = 38$) that do not.

DISCUSSION

The results of this survey are consistent with previous publications assessing dental anxiety and dental care.^{2–4} In this study, it was shown that the prevalence of extreme fear and anxiety levels was 14% and that 21% of the population had an anxiety level characterized as nervous. It was found that a large percentage of the population (60%) preferred to receive medication as a means to control dental anxiety, and that they would be willing to go the dentist more often if an anxiety reduction method were available. In addition, 40% preferred to be completely asleep (receive general anesthesia) during dental care. A strong relationship between dental fear and the lack of dental visits in Kuwait was also demonstrated, and results revealed that patients were willing to use medication and general anesthesia as a means of anxiety reduction to have dental treatments.

There exists an agreement between the response of the general population and those providing dental care that a need does exist for anesthesia services in Kuwait. However, it appears that adequate training in this field is lagging behind demand. Education for dental health care providers is necessary to provide the structure and personnel to meet the needs of dental patients in Kuwait. Only small percentages (31.5%, $n = 23$) of dental practitioners feel they can adequately treat patients with anxiety and fear. Further analysis reveals that the majority of practitioners who feel adequately trained are current practicing specialists. Pediatric dentists make up the majority of these respondents (52.2%) followed by oral surgeons (21.7%) and periodontists (17.4%), respectively. Only 8.7% ($n = 2$) are general dental practitioners.

Patients with dental anxiety appear to neglect oral health, seeking care only if a dental emergency should arise. This could lead to significant general health problems. The main reason, evident by this survey, was the limited availability of anxiety reduction services necessary to allow treatment to proceed. In Kuwait, where health care is socialized and great advancement in health care has been made, dental services still lack

sedation anesthesia care as a means of anxiety and fear control. The findings of this survey have shown that there is a great demand for anesthesia services in Kuwait that would help improve access and quality of care to many dental patients.

The limited availability of anesthesia services to dental patients should be improved by the newly created specialty in the field of dental anesthesiology within the Kuwaiti Dental School System, thus increasing the number of dentists to provide sedation care and general anesthesia. Also, by incorporating didactic education and clinical experience of anxiety management within the Kuwaiti Dental School curriculum, graduating dentists may be more willing to provide milder forms of anxiety control for their patients on a daily basis. This new implementation is projected to drastically increase the number of trained dentists within the community capable of managing dental anxiety. Furthermore, continuing education courses detailing the pharmacologic management of anxious patients would also increase the number of practicing dentists willing to offer medications to their patients for anxiety reduction.

CONCLUSION

The study showed a high prevalence of dental fear and anxiety in the Kuwaiti population and a perceived need for anesthesia services by dental care providers. Fear and anxiety as a barrier to dental care in Kuwait was also demonstrated. About 30% of the population canceled their dental appointments due to fear, which translates to 750,000 from a population of 2.5 million in Kuwait. In addition, the study showed that more people would be willing to go to the dentist if anesthesia services were available to them.

Given that the majority of practitioners surveyed feel inadequately qualified to provide anesthesia care, a need also exists to improve training. The necessity for development of advanced education programs in dental anesthesiology will be essential to meet the demand for anesthesia and sedation services in Kuwaiti dentistry practice.

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