

# Management of dental anxiety: A survey of Nigerian dentists

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## ABSTRACT

**Background:** Dental anxiety is a major issue with respect to provisions of and access to dental care. We evaluated the knowledge and management of anxiety among Nigerian dentists. **Materials and Methods:** The study population included 192 Nigerian dentists recruited during an annual national dental conference in Abuja. The conference was a meeting point for dentists with post graduation experience ranging between 1 and 32 years and from different part of the country. They completed a structured questionnaire on dental anxiety. Data analysis was performed using SPSS version 16. **Results:** Of the interviewed dentists, 122 (55.1%) practiced in teaching hospitals and 24% had their specialization in child dental health. A total of 34 (19.8%) dentists had been exposed to formal trainings on the practice of dental anxiety. Of this number, 66% had basic life support training and only 11.8% had refresher training programs. The most preferred route of administration of anxiolytic drugs was oral (57.3%). Most of the respondents were of the view that dental anxiety should not be instituted for all dental patients. **Conclusion:** The interviewed Nigerian dentists were knowledgeable and managed dental anxiety. Although some of them had no formal training on dental anxiety, the major consensus is that dental anxiety should not be instituted for all dental patients.

**Keywords:** Dental anxiety, anxiety, Nigerian dentists

## INTRODUCTION

Management of dental anxiety involves dental anxiety, which is a drug-induced state in which patients respond appropriately to verbal commands with no effect on cardiovascular or ventilator functions although cognitive function and coordination may be impaired.<sup>[1,2]</sup>

Dental anxiety may be exogenous or endogenous<sup>[3]</sup> and can be measured reliably and differentiated by the symptoms.<sup>[4]</sup> Exogenous anxiety responds to an anticipated unpleasant external situation and the features include moist palms, fluttery stomach, fine hand tremors, hot flashes or a combination of these

reactions. This form of anxiety affects both sexes equally, not discriminating among age groups, and can be treated with behavioral management.<sup>[3]</sup> Endogenous anxiety attacks occur spontaneously without provocation. Symptoms include lightheadedness or dizziness, difficulty in breathing, hyperventilation, tightness of the throat, chest pains and fear of losing control, sleeplessness and varying or continuous levels of nervousness.<sup>[4]</sup>

Patients with dental anxiety suffer considerably from impaired oral health-related quality of life, and the degree of this impairment is related to the extent of dental anxiety/fear.<sup>[5]</sup> It is a major issue with respect to provisions of and access to dental care.<sup>[6]</sup> It has been stated that 31% of adults suffer from dental anxiety.<sup>[7]</sup> A study carried out among Ghanaians revealed that 47.3% of dental patients were fearful of various dental treatments.<sup>[8]</sup> The field of dentistry offers many options that ease fear and pain, although they are underutilized. These resources include patient management skills, use of oral sedatives/nitrous oxide

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for conscious sedation and general anesthesia services provided by dental anesthesiologists. In dentistry, the objective of sedative management is often to achieve mild to moderate levels of sedation. Pain relief is not a major goal; rather, sedation is used as an adjunctive means of controlling the psychological component of discomfort and resistance to treatment.<sup>[9]</sup> However, it is important for the dentist to be aware of these considerations before employing any form of sedation, as the agents and techniques. Nathan and Bamgboye<sup>[10,11]</sup> reported that sedation will only short circuit the occurrence of non-coping behavior. Thus, sedation is advised only when behavioral strategies alone have failed or are contraindicated. It is only optimally effective when there is a rapport between the dentist and the patient.<sup>[12]</sup>

Avoidance of dental treatment which is related to dental fear which can be reduced by professional commitments to its alleviation<sup>[13]</sup>. The objective of this study is to evaluate the management of dental anxiety among Nigerian dental practitioners.

## MATERIALS AND METHODS

This was a descriptive study carried out in 2011 among Nigerian dentists at a national conference of dentists in Abuja. The conference was a meeting point for 310 dentists from different parts of the country. A structured questionnaire was administered to Nigerian dentists who were selected randomly using a table of random numbers in an annual national dental conference. The questionnaire was anonymous. Information obtained included field of specialization, duration and place of practice, knowledge of and educational exposure to management of dental anxiety, knowledge of dental anesthesia, preferred drugs and route of administration, types of sedation and complications arising were requested.

The respondents were also asked to rate the frequency of application of the outlined dental anxiety management techniques on a 5-point Likert scale that was scored as follows: a = 1, b = 2, c = 3, d = 4 and e = 5. A total score of 2–6 indicated knowledgeable and 8–10 indicated not knowledgeable.

Data were analyzed using SPSS version 16.0 Inc., Chicago, IL, USA. The statistical significance of outcomes was evaluated at the 95% confidence level.  $P < 0.05$  was considered significant.

## RESULTS

A total of 192 dentists were administered the questionnaires. Response rates for the different questions vary among the respondents. Table 1 shows that 33 (17.2%) child dental health specialists managed dental anxiety more than their counterparts in the other fields. More than half (67.7%) of the dentists in our study claimed to be knowledgeable in the practice of dental anxiolysis. Table 2 shows the proportion of respondents with formal training program on dental anxiolysis. Only 17.7% of the study population had formal

**Table 1: Type of specialization**

Field of specialization	n (%)
General practitioner	23 (12.0)
Preventive	16 (8.3)
Restorative	26 (13.4)
Oral surgery	25 (13.0)
Child dental health	33 (17.2)
Oral pathology	14 (7.3)
No response	55 (28.6)
Total	192 (100)

**Table 2: Formal training on sedation**

	n (%)
Formal training	
None	146 (76.0)
Had formal training	34 (17.7)
No response	12 (6.3)
Total	192 (100)
Type of formal training	
Basic life support	22 (64.7)
Advanced cardiovascular life support	7 (20.6)
Basic life support	22 (64.7)
Basic and advanced cardiovascular life support	1 (2.9)
Other related course	4 (11.8)
Total	34 (100)

**Table 3: Preferred route of administration**

Routes of administration	n (%)
Oral	86 (44.8)
Intramuscular	12 (6.3)
Intravascular	31 (16.1)
Inhalation	19 (9.9)
Others (e.g., rectal)	2 (1.0)
No response	42 (21.9)
Total	192 (100)

**Table 4: Preferred drugs**

Preferred inhalation drug	n (%)	Preferred intravascular drug	n (%)
Seroflurane	10 (5.2)	Midazolam	78 (40.6)
Nitrous oxide	130 (67.7)	Propofol	12 (6.3)
Other anesthetic	10 (5.2)	Fentanyl	3 (1.6)
Drugs		Ketamine	56 (29.1)
		Other anesthetic drugs	12 (6.3)
No response	42 (21.9)	No response	31 (16.1)
Total	192 (100)	Total	192 (100)

training on sedation. The preferred route of administration of drug was oral (57.3%) [Table 3]. The preferred inhalational and intravascular drugs were nitrous oxide (67.7%) and midazolam (40.6%), respectively [Table 4]. The highest proportion (29.6%) of dentist seen were child dental health practitioners [Table 5].

Only 25 (13.4%) respondents reported complications including deep sedation 8 (32%), deleted reversal 2 (8%), dizziness 5 (20%), reversal failure 2 (8%), syncope 3 (12% vertigo 2 (8%) and vomiting 3 (12%). Most of the respondents, 183 (96.5%), did not practice elective intubation. Three (1.25%) of the respondents had less than 25% of intubation cases. Four (2.3%) of the respondents intubated more than 25% of their cases. Of the respondents, 125 (84.4%) believed that dental anxiety should not be instituted for all patients. Consent was obtained by 124 (65.5%) of the respondents before instituting dental anxiety on their patient.

## DISCUSSION

Majority of the Nigerian dentists who participated in the study were specialist in the child dental health. This is in contrast to the report from Illinois, USA, where majority of dental practitioners were oral and maxillofacial surgeons.<sup>[14]</sup> Majority of the studied Nigerian dentist reported being knowledgeable about dental anxiety questionnaire. A study carried out earlier in Nigeria among dentists observed that only 26.7% of respondents were aware of dental anxiety questionnaires and 15.1% have seen the instrument applied.<sup>[15]</sup> The reason for our finding might be related to improved awareness in dental anxiety. Furthermore the study populations are different being exclusively made of specialists or consultants in the current report compared to compared predominantly trainees made of residents and house officers win the previous report.<sup>[15]</sup>

Majority of the Nigerian dentists with formal training had no retraining program. This is in contrast to the

Illinois study,<sup>[14]</sup> where 90% of the respondents were exposed to formal training and 80% reported recent training within the last 2 years preceding the study. This suggests that majority of the study population might have been adequately trained or retrained on dental anxiety.

In contrast to the Illinois study, majority of those administering conscious sedation with formal training had only basic life support training, and only few had both basic and advanced cardiovascular training. In Illinois report,<sup>[14]</sup> dentists practicing dental anxiety either had Type A or Type B permits, which regulated all practitioners who administered conscious sedation regardless of the route of drug administration. In Illinois, no permit was required for dental anxiety, type A permit was required for conscious sedation and type B permit was required for deep sedation and general anesthesia. The rules also mandated that annual continuing education credits should be earned in sedation/anesthesia for all practitioners with a sedation/anesthesia permit.

The most preferred route of administration of sedation drugs was oral. This is a contrast to a previous study conducted among Nigerian resident and house officers where intramuscular route was the most preferred route.<sup>[15]</sup> It is uncertain if this is a reflection of changes in anxiety practice pattern of Nigerian dentists. Oral route is non-invasive and potentially less associated with risk of viral and bacterial infection and side effects<sup>[16-18]</sup>

Our study shows that the interviewed dentists preferred nitrous oxide (67.7%) as their inhalation drug. This is probably because nitrous oxide inhalation is relatively inexpensive, easy to administer and amenable to control through careful titration or incremental dosing. This inhalational sedative that offers anti-anxiolytic effects with virtually no side-effects are few.<sup>[19]</sup> Midazolam (40.6%) was the preferred drug among the respondent.

It seems most of our respondents did not have to intubate and put patient under general anaesthesia. This is similar to the report from the Illinois study,<sup>[14]</sup> which reported that 94% of their respondents did not intubate.

## CONCLUSION

In conclusion only a few of the study population had formal training on dental anxiety and this procedure

Specialty	Practicing dental anxiety			
	Practising	%	Not practicing	%
General dental practice	5	8.1	16	29.6
Oral surgery	17	27.4	7	13.0
Preventive	5	8.1	6	11.1
Restorative	8	12.9	12	22.2
Child dental health	20	32.3	7	13.0
Oral pathology	7	11.3	6	11.1
Total	62	100	54	100

was practiced predominantly by oral surgical and child health dentists. Oral route of administration was the preferred route and administration of anxiolytics while the predominantly used inhalational and intravenous agents were nitrous oxide and midazolam. Majority of the dentists do not believe in instituting anxiolysis for all dental patients.

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## QUESTIONNAIRE KAP ON DENTAL MANAGEMENT OF ANXIETY

1. Age on last birthday
2. Sex: Male Female
3. Marital Status:  
Single  
Married
4. Nationality:
5. Place of Practice:  
a. Private  
b. Government  
c. Teaching  
d. Others
6. Position:  
a. Dental officer  
b. GDPC. Reg.  
d. SR.  
e. Consultant.
7. Year of graduation:
8. Field of Specialty:.....
9. What is dental anxiolysis  
a. A method of achieving anaesthesia  
b. Art of administering local anaesthesia and analgesia  
c. To alleviate patient anxiety  
d. Adjunct to achieving perform local anaesthesia
9. What is needed for anxiolysis  
a. Competent dentist  
b. Trained assistant

- c. Resuscitation equipment  
d. Reversal drugs  
e. Consent of patient.
10. Are you aware of a dental anxiety questionnaire?  
a. Yes.  
b. No.
11. How often do you apply it?  
a. Always  
b. Sometimes  
c. Occasionally  
d. Rarely  
e. Never?
12. Have you gone for any formal training in dental anxiety?  
a. Yes  
b. No
13. If yes, what type of training?  
a. Basic life support  
b. Advanced cardiovascular life support training  
c. Others (specify)
14. Do you practice dental anxiety?  
a. Yes  
b. No
15. How often do you practice it?  
a. Always  
b. Sometimes  
c. Occasionally  
d. Rarely  
e. Never?
16. What is your preferred route of administration  
a. Oral  
b. Intramuscular  
c. Intravenous  
d. Inhalation  
e. Others (pls specify)
17. What is your preferred inhalation drug
- a. Sevoflurane  
b. Nitrous oxide  
c. Others (pls specify)
18. Is your facility accredited?  
a. Yes  
b. No
19. When administering anxiety who are the members of your team?  
a. Operator alone  
b. Operator and 1 assistant  
c. Operator and 2 assistant  
d. Operator and certified registered nurse anaesthetist  
e. Operator with registered nurse and additional assistant
20. How often do you practice elective intubation in office under close scrutiny  
a. Do not intubate  
b. Intubate less than 25% of cases  
c. Intubate more than 25% of cases but less than 75% of cases.  
d. Intubate more than 75% of cases.
21. Have you ever experienced any complication while instituting dental anxiety?  
a. Yes  
b. No
22. If yes, what type of complication?  
a. Deep Sedation.  
b. Deleted reversal  
c. Dizziness  
d. Reversal failure  
e. Syncope  
f. Vertigo  
g. Vomiting
23. Should dental anxiety be instituted for all dental patients?  
a. Yes  
b. No

