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This course was written for dentists, dental hygienists, and dental assistants.

The dental practitioner's ultimate guide to adult patient fear, anxiety, and phobia

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Abstract

The American Dental Association reports 22% of adult Americans avoid the dentist due to fear and anxiety, which equates to one in five.[1] Fifty-nine percent of Americans cite cost as the top reason they do not visit the dentist more frequently.[1] Patient anxiety etiologically can be psychological, financial, physical, or a combination of these. The anxious patient presents with significant challenges to rendering care in the dental environment. This course takes a practical approach in the dental management of fearful, anxious, and/or phobic patients that can be incorporated into even the busiest offices. Multimodal, evidence-based, nonpharmacological, and pharmacological approaches to anxiety management are summarized to assist dental practitioners in successfully treating these patients and improving their oral health and overall quality of life.

Educational objectives

At the conclusion of this course, dental practitioners will be able to:

1. Incorporate an anxiety management plan that best fits their patient population.
2. Identify dentally fearful, anxious, or phobic patients and apply correct management techniques.
3. Provide more pleasant and relaxed appointments to improve both the patient and provider experience.

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Introduction

Three terms have been used in dentistry concerning patients' aversion and apprehension to treatment.

1. **Dental fear:** Actual *response* to a dental object or situation that induces an emotional and/or physical response to a perceived threat.[2,3]
2. **Dental anxiety:** An *emotional state* that precedes an encounter with a feared object or situation.[2]
3. **Dental phobia**: Dental phobia is specified in the DMS-5 (*Diagnostic and Statistical Manual*) under "Specific Phobias," defined as fear, anxiety, and avoidance of situations lasting more than six months, which cannot be attributed to another mental health disorder, substance abuse, or medical condition.[4] The dental phobic situation almost always provokes immediate fear or anxiety and is out of proportion to the actual danger posed, which leads to feelings of dread and panic. Patients will actively avoid the dental environment or endure the situation with intense fear and anxiety that can cause clinical distress or impairment.[4] Specific phobias typically develop between ages 7 to 11, with many patients unable to identify the reason their phobia developed.[4]

Patients who suffer from dental fear, anxiety, or phobia will delay or avoid needed procedures, which leads to poor dental health outcomes and quality of life. When they do seek treatment, they typically present with more complex and expensive treatment plans. Their fear, anxiety, or phobia causes behavioral challenges in the dental environment, and if not handled correctly, can lead to an unpleasant experience for both the patient and provider. This course will present dental fear, anxiety, and phobia statistics and etiology, and offer helpful tips and tricks for managing these patients in the dental environment.

Statistics

The American Dental Association reports 22% of adult Americans avoid the dentist due to fear and anxiety, which equates to one in five.[1] Literature reports vary for the percentage of those with dental phobia, ranging from 3%–5% to 3%–16%.[3,5,6] Patients with dental fear, anxiety, or phobia are less likely to remain compliant with regular follow-up appointments, skip or cancel appointments, and be reluctant to make upcoming appointments.[7] Highly anxious patients are likely to have avoided dental care for at least two years.[7]

A study published in *European Journal of Oral Sciences* assessed 1,959 participants for fears and phobias.[5] The study found that 20.4% of participants had no fear, and 79.6% reported being fearful of at least one object or situation. The most common *fears* identified were to snakes, heights, physical injury, dental treatment, spiders, and injections. The least common fears were flying, thunder, blood, and darkness (table 1).

The study also found that the most common *phobias* were dental treatment first, and then heights and spiders second and third (table 2). Women reported significantly higher *fear* of dental treatment while there were no statistical differences in gender reported for *phobia* of dental treatment.[5]

TABLE 1: Fear[5]

Object or situation	Prevalence of fear
Snakes	34.8%
Heights	30.8%
Physical injury	27.2%
Dental treatment	24.3%
Spiders	23.3%
Injections	16.1%
Flying, thunder, blood, darkness	8.3-12%

TABLE 2: Phobia[5]

Object or situation	Prevalence of fear
Dental treatment	3.7%
Heights	3.1%
Spiders	2.7%
Snakes, physical injury, injections, flying, thunder, blood, darkness	0.6-1.6%
Spiders	23.3%
Injections	16.1%
Flying, thunder, blood, darkness	8.3-12%

Etiology

Dental fear, anxiety, and phobia are multidimensional phenomena with complex etiology combining psychological, physical, and financial facets.

Psychological: Psychological fear can manifest into psychosomatic effects (physical illness caused by a mental factor such as internal conflict or stress). There are many psychological fears or phobias that afflict dental patients. Patients may fear a loss of control, and the supine/semisupine positioning used in the dental chair can lead to feelings of powerlessness and submission. Patients may have comorbid underlying psychological conditions such as obsessive-compulsive disorder, depression, or post-traumatic stress disorder that may be a manifestation of previous sexual, physical, or psychological child or adult abuse. Dental providers need to remind these individuals they are in a safe space and be mindful of the fact that they are in a patient's personal and intimate space.

The study of how space is used in communication is termed "proxemics," and it identifies four distances maintained during human communication[8,9] (table 3). Dental health providers invade patients' culturally derived boundaries of personal and intimate space without warning and many times without permission from the patient, which can invoke tension and anxiety.[8] Dental professionals can create safer and more secure spaces while increasing the patient's sense of control with an understanding, mindfulness, and respect for this concept of proxemics.

A recent systematic review published in the *Journal of Advanced Nursing* in 2019 found that 20%–30% of young adults have a fear of needles that interferes with needed treatment.[10] One in four adults report a clinically significant fear of dental injections.[11] Those fearful will subjectively report higher pain during injections due to psychosomatic manifestation of the cognitive fear. Other than desensitization methods, whereby patients are introduced to the feared object in a gradual manner,

there is also a computerized program that practitioners can utilize to assist those with needle fear, anxiety, or phobia. CARL (computer-assisted relaxation learning) aims to reduce fear of dental injections through two-to-four-minute video segments that provide patients cognitive and physical coping strategies and tools with the goal to alleviate the fear, anxiety, or phobia of dental injections.[11]

Patients may be fearful of germs. This topic is of increased relevance during the SARS-CoV-2 pandemic with mask-wearing recommendations for laypeople, social distancing, and constant news coverage that can present inconsistent or conflicting information.

Given the digital age and easy access to information, patients can be negatively influenced through social media or blog posts about painful dental experiences or gain access to unreliable or uncredited sources of information that adds to their anxiety. Some patients have a fear of being judged or ridiculed when they visit an oral health professional. This psychological aversion leads to avoidance of dental care for fear of embarrassment. Twenty-three percent of Americans avoid the dentist, and one in four avoid smiling due to embarrassment about their teeth.[1]

Unconscious physiological responses that involve the limbic system and olfactory nerves can lead to dental fear, anxiety, or phobia. The human limbic system is the part of the brain involved with behavior, emotions, and memory. It regulates autonomic and endocrine function in response to emotional stimuli.[12] The limbic system hippocampus and amygdala are involved in emotional regulation of anxiety, aggression, and fear. The amygdala assigns emotional meaning to memories, and the hippocampus forms the sensory memory of the experience and converts it from short-term to long-term memory.[12] For example, every time I smell apples, I remember a pleasurable experience of visiting an apple orchard as a child on a school field trip, and I feel a rush of happiness and calmness. For some, their limbic system has programmed them to associate specific dental sensory stimuli (sight, sound, smell, taste, feel) with a negative emotion, which increases anxiety and fear when they are introduced to that trigger during an appointment.

TABLE 3: Proxemics[8,9]

	Distance between people	Description	Examples
Public space	12-25 feet	No physical contact; very little eye contact is possible	Shopping centers; city sidewalks; public speaking distances
Social space	4-12 feet	No physical contact; eye contact is possible	Information and formal business and social relationships; distance where people set up tents on a beach
Personal space	1.5-4 feet	People at arm's length just outside the "touching" zone; distance where personal discussions take place	Meeting rooms
Intimate space	Contact-18 inches	Direct contact; humans only allow their most intimate associates into this space (family members, spouse, etc.)	Lovemaking; wrestling; crowded elevator; dental procedures

Lastly, patients may have internal issues with trusting health-care practitioners. These patients may come across as argumentative, confrontational, and combative.[2] They may use sarcasm such as, "I guess I'm paying for the doctor's family vacation with all this work you say I need." These patients may threaten to get a second opinion from another dental office. The dentist should encourage the second opinion and offer a no-charge copy of the patient's radiographs. Lengthy explanations of treatment needs with the added use of scanners, 3-D imaging, and intraoral camera photos will assist in managing this type of dental anxiety. Ask the patient's permission prior to performing an examination, and ensure all probable outcomes are discussed to avoid changing treatment in the middle of an appointment.

Financial: A very real source of dental anxiety is related to the cost and extent of needed treatment. Fifty-nine percent of Americans cite cost as the top reason they do not visit a dentist more frequently.[1] Nationally, the number of emergency department visits with pain of an oral origin have doubled in the last 10 years to $2.2 million (1.65%) and are responsible for $1.7 billion in lost revenue.[13] Dental financial anxiety leads to avoidance of needed treatment and places an undue burden on an already overworked health-care system.

Financial limitations to dental treatment are common sources of anxiety in the United States due to the lack of resources available to pay for treatment. In 2016, 46% of dental expenditures came from private insurance, 40% was out-of-pocket, and 12% was from CMS programs (Medicare, Medicaid).[14] Only 45%–57% of adult Americans ages 18-64 have dental insurance, and in 2018, 14%–29% did not utilize their benefits.[15] In 2019, the United States spent 17% of GDP (gross domestic product) dollars on health services, with only 4% on dental expenditures.[16] Until changes are made at the national level, this source of dental anxiety will continue for many US citizens.

Physical: There are many physical fears associated with the dental environment that lead to fear, anxiety, or phobia. Fear of gagging, choking, not becoming numb, or an inability to breathe when instruments are in the mouth are common triggers. Patients can be fearful or anxious of being hurt, especially those with low pain thresholds. Sensory-sensitive patients may struggle with anxiety to sounds (drill, ultrasonics, scraping), taste, and the smell of dental products or blood. Patients may report adverse reactions to local anesthetic such as adrenaline rushes. Do not downplay or

dismiss this concern but explain typical versus atypical physiological reactions to vasoconstrictors used in dentistry (epinephrine and levonordefrin) so the patient better understands his or her body's reaction[2] (table 4).

TABLE 4: Reactions to vasoconstrictors (epinephrine and levonordefrin)[17]

Increased heart rate and force of contraction
Changes in blood pressure
Increased fear or anxiety
Tension, restlessness
Headache
Bronchodilation

Dental management techniques

Screening: The first step in successfully treating fearful, anxious, or phobic dental patients is to identify them and then seek the source of their fear. Screening tools are available for the dental practitioner and have been demonstrated *not* to increase a patient's anxiety[2] (table 5).

Dental providers should ask patients if they can identify what makes them anxious. Some patients can identify exactly what they are afraid of, such as injections, sounds, or gagging, while others will be unable to identify their trigger and will simply say that everything about the dental environment bothers them. These are typical and expected responses because patients with fear, anxiety, or dental phobia will present along a vast continuum from mild to debilitating with multiple etiologies.

When practitioners utilize a multimodal approach in their management of anxious patients, more pleasant experiences for both patients and staff will occur. Providers should access the degree of impact of the patient's fear, anxiety, or phobia and ascertain their anticipated degree of cooperation to determine which interventions will lead to a successful visit. Pharmacological and nonpharmacological approaches to anxiety management are available, and both may be needed during appointments. Since dentally anxious patients are more likely to report negative perceptions of their dentist and work rendered, it is imperative that interventions are utilized to increase satisfaction.[7]

Nonpharmacological approaches: Nonpharmacological approaches to managing dental fear, anxiety, or phobia include good communication, desensitization, paced breathing, distraction, and olfactory stimulation.

Communication: Good communication is at the heart of any nonpharmacological anxiety management plan. Setting appropriate expectations from the get-go for patients and providers will go a long way to ease stress and fear. The level of a patient's anxiety (mild/moderate/high/severe/debilitating) will dictate how much information they want to know about procedures. For some, more information about procedures is helpful, but for others, information is counterproductive. If a patient is anxious of sensory stimuli, then it is prudent to describe what they will see, smell, feel, taste, and hear.

Communication plays one of the most important roles in reducing patient fear, anxiety, or phobia and these approaches need to be taken by all staff members who interact with the patient in the office. Do not downplay patients' anxiety. Acknowledge their concerns and analyze their nonverbal language. Reluctance to sit in the dental chair, fidgeting, lack of eye contact, increased breathing/heart rate/blood pressure, talking excessively, or lack of responses to questions are all cues of an anxious patient.

Listen intently to patient responses and sit eye-to-eye with them. If you stand while speaking with your patient in a reclined chair position, you unknowingly place yourself in a position of authority and intimidation. Sitting at the same level as your patient when communicating gives the nonverbal impression you are willing to listen and will not rush through their appointment time.[8] Be friendly, empathetic, and use calm tones in your voice. Make eye contact with patients even if they are avoiding your eyes. Offer multiple reassurances that they are in a safe place and that their comfort is of utmost concern.

During and after treatment, offer positive reinforcement and moral support in a noncondescending and genuine way so as not to sound fake or put-on.[2] Congratulate them on taking control of their oral health and offer praise. Give them a voice and ability to communicate with you, even during active treatment. Building positive and trusting relationships between patient and provider will lead to better satisfaction, lower fear, and more pleasant experiences.

Desensitization: Desensitization involves exposing the individual to aspects of dentistry they find frightening in small, manageable doses, and then increasing the exposure as the patient develops coping mechanisms.[2] For example, if the source of the anxiety is a negative physical response

TABLE 5: Dental anxiety screening tools

Screening tool	Details
Corah's Dental Anxiety Scale	4-item questionnaire with 5 possible answers to identify a patient's anxiety level as mild, moderate, high, severe, or phobic
Modified Dental Anxiety Scale (MDAS)	
Modification of Corah's Dental Anxiety Scale[18]	5-item questionnaire to identify mild, moderate, or phobic patient
Dental Anxiety Scale (DAS)	4-item questionnaire using Likert scale 5-25 to identify patients from "no anxiety" to "extreme anxiety"
Dental Fear Survey (DFS)	20-item, 5-point scale with 3 dimensions measured: avoidance, physiological arousal, fears of specific stimuli[19]
Index of Dental Anxiety and Fear (IDAF-4C+)	3 modules to measure dental phobia, feared dental stimuli, and an 8-item dental anxiety and fear module to assess emotional, behavioral, physiological, and cognitive components of the anxiety and fear response[20]

to dental local anesthetic, then the practitioner could start with administering a vasoconstrictor-free solution for the first appointment and then gradually switch to a vasoconstrictor solution.

Paced breathing: Paced breathing is a technique used for adults and children to ease anxiety and relax the individual. The technique involves inhaling through the nose and holding for five seconds before exhaling through the mouth slowly and steadily over a two-to-four-minute time period. Paced breathing will reduce a person's heart rate and can assist with avoiding an anxiety attack. Smartwatches have built-in alerts that instruct people to perform paced breathing when an increased heart rate is detected. The paced breathing technique can be used anytime the patient is feeling anxious, during dental injections, or in gagging management.

Distraction: Distraction techniques can be both auditory and visual. Visual distractions commonly used in dentistry are TV, 3D video glasses, and visualization exercises, such as having patients picture themselves at the beach when a feared trigger is about to occur. Most dental offices use ambient background music as an auditory distraction, although its effectiveness on highly anxious patients is minimal.[21] Highly anxious or phobic patients are better served exploring music therapy, which has been used for decades to reduce anxiety and increase pain thresholds in patients. Multiple Cochrane Reviews present music therapy as having a positive effect on anxiety reduction prior to medical procedures, examinations, and surgeries.[21-23]

Olfactory stimulation: Olfactory stimulation has been useful in the management of a multitude of disorders. Humans associate odors with memories as dictated by their limbic system. Odors can elicit a response of calmness or anxiety depending on the patient's previous experience with the scent. Aromatherapy is a holistic healing treatment that uses plant extracts and essential oil scents to promote health, increase calm and relaxed feelings, and decrease anxiety and pain. The most common scents used are lavender, chamomile, clary sage, mandarin, and orange blossom. Two separate publications in *Physiology & Behavior* found the use of lavender and orange scents in dental waiting rooms lowered patient anxiety and improved their mood.[24,25]

Appointment tips and tricks: Other appointment tips and tricks to better manage fearful, anxious, or phobic dental patients include:

- Use the explain–ask permission–show–do–follow-up approach. Explain what needs to be done, ask permission to do it, show the patient how it will be carried out, do the action, and then follow up with the patient immediately to see how the person is feeling.[2]
- Give the patient a stress ball or fidget device to hold during procedures.
- Use weighted blankets to provide a sense of security.
- Schedule appointment times first thing in the morning so the patient does not stress all day about the upcoming appointment or talk themselves out of keeping the appointment.
- Avoid keeping the anxious patient in the waiting room because this gives them time to think about what is to come and get worked up.
- Offer and encourage rest breaks before the patient has an anxiety meltdown. Anxious patients need mental breaks to calm themselves, collect their thoughts, and reset their sensory system. Allow them time to stand up, use the restroom, or make a phone call to a loved one. Dental providers need to recognize the cues their patient is getting worked up and overly anxious and offer the break before a breakdown occurs. Once the patient reaches their maximum anxiety threshold, completing the appointment may not be possible, and getting them back for another appointment will be compromised.
- Allow the patient the ability to signal you when something is bothering them. Let them know that, once signaled, the actions of the provider will be immediately stopped as long as cessation does not cause harm. This will build a sense of trust and provide the patient with a sense of control over the situation.
- Schedule more time for anxious patients. If they feel rushed or that their provider is more concerned with how fast procedures are completed versus how they are feeling, trust will be broken.
- This population is more likely to cancel or no-show appointments due to their anxiety. Requiring prepayment for appointment times will assist patients in not cancelling and will maintain the office daily production.

Pharmacological approaches: Dental fear, anxiety, or phobias have a wide spectrum from mild to debilitating, and their level dictates the management approach. Patients' dental anxiety or phobia can be so severe that they enter a sympathetic fight-or-flight response or panic attack during a visit, which can lead to a dental emergency (tables 6 and 7). These patients may best be served with pharmacological approaches. The use of pharmacological agents does raise the cost of treatment, so their use as a first-line management approach may not be practical for all patients. While pharmacological agents allow for dental procedures to take place, they do not teach patients coping strategies for future visits.

TABLE 6: Fight-or-flight body reactions[12]

Increased heart rate and force of contraction
Increased pulse rate
Bronchodilation and more rapid breathing
Mydriasis (dilated pupils) to increase sight
Heightened sensory system
Increased glucose in blood circulation

TABLE 7: Panic attack symptoms[26]

Shortness of breath
Dizziness, unsteady feeling, faintness
Trembling
Sweating
Choking
Nausea or abdominal stress
Paresthesia
Flushing or chills
Chest pain or discomfort
Fear of dying
Fear of losing control

Pain is a physical process with psychological components. Dentally anxious patients have exaggerated pain responses and perceptions, which leads to overestimation of pain experienced during procedures.[6,7] Pharmacological interventions such as anxiolytic medications (antianxiety agents), inhalation sedation, minimal/moderate/deep sedation, or general anesthesia may be required to produce effective anesthesia, analgesia, and avoid emergencies during procedures.

Anxiolytic medications: Patients can be so anxious that they are unable to sleep the night before an appointment, which increases their anxiety and worry. Benzodiazepines are a class of drugs that can ease anxiety and improve sleep.[27] Examples of commonly used benzodiazepines in dentistry are diazepam (Valium), midazolam (Versed), alprazolam (Xanax), and lorazepam (Ativan), given either the night before and/or day of the appointment.[27]

Inhalation sedation: Nitrous oxide-oxygen sedation is an inhalation method of sedation that provides some degree of analgesia, reduces anxiety, raises pain thresholds, and increases feelings of relaxation in clinical outpatient dentistry.[26] It is intended for patients with mild to moderate anxiety and those with strong gag reflexes. Debilitating or severely anxious patients may not respond to this form of conscious sedation and may need more advanced pharmacological approaches.

Minimal/moderate/deep sedation: These forms of sedation are indicated for uncooperative anxious or phobic patients who are unable to tolerate dental procedures through any other method discussed in this course. This level of sedation has allowed many patients to receive dental treatment for conditions that would have otherwise been left untreated. In minimal and moderate sedation, a patient is able to maintain their airway independently, can respond to verbal commands, but has impaired cognitive function.[28] In deep sedation, the patient cannot be easily aroused but can respond to painful stimuli.[28] Assistance may be required for maintaining their airway.[28] The drugs used for these levels of sedation vary, but commonly used agents in dentistry are propofol (Diprivan), ketamine (Ketalar), midazolam (Versed), and dexmedetomidine (Precedex), which all cause varying degrees of sedation and amnesia.[29] Adverse effects such as respiratory depression, cardiovascular depression, or pulmonary aspiration are possible.[27,29]

General anesthesia: General anesthesia is a drug-induced loss of consciousness whereby the patient cannot be aroused, even with painful stimuli.[28] Patients may need assistance maintaining an airway and cardiovascular function may be impaired.[28]

Conclusion

This course has shown it is possible to have pleasant and productive dental visits for fearful, anxious, or phobic patients. Utilizing multimodal approaches of both nonpharmacological and pharmacological origins will assist dental practitioners in successfully treating the 22% of Americans who are dentally anxious. This population deserves oral health providers who are knowledgeable and willing to work alongside their individual needs to achieve oral and general health. Through cooperation and understanding between provider and patient, pleasant and productive appointments can be rendered.

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QUESTIONS

1. What percentage of Americans avoid visiting the dentist due to dental fear or anxiety?
   A. 12%
   B. 22%
   C. 35%
   D. 55%

2. Which of the following terms describes a person's response to a dental object or situation that induces an emotional and/or physical response to a perceived threat?
   A. Dental fear
   B. Dental anxiety
   C. Dental phobia
   D. None of the above

3. Which of the following terms describes an emotional state that precedes an encounter with a feared object or situation?
   A. Dental fear
   B. Dental anxiety
   C. Dental phobia
   D. None of the above

4. Which of the following terms is described in the DMS-5 as fear, anxiety, and avoidance of a situation lasting more than six months, which cannot be attributed to another mental health disorder, substance abuse, or medical condition?
   A. Dental fear
   B. Dental anxiety
   C. Dental phobia
   D. None of the above

5. According to a study published in the *European Journal of Oral Sciences*, of the following listed, which had the highest percentage of participant fear?
   A. Blood
   B. Dental treatment
   C. Thunder
   D. Flying

6. According to a study published in the *European Journal of Oral Sciences*, which of the following had the highest percentage of participant phobia?
   A. Dental treatment
   B. Snakes
   C. Spiders
   D. Blood

7. In the study of proxemics, what space distance describes humans that are less than 18 inches away from one another and where dental procedures take place?
   A. Public space
   B. Social space
   C. Personal space
   D. Intimate space

8. In the study of proxemics, what space distance describes humans that are 12-25 feet apart, such as public speaking distance?
   A. Public space
   B. Social space
   C. Personal space
   D. Intimate space

9. Which of the following is a psychological fear patients with dental anxiety may have?
   A. Fear of loss of control
   B. Fear of injections
   C. Fear of germs
   D. All of the above

10. Which of the following structures of the brain is a part of the limbic system that converts sensory memory from short-term to long-term memory?
    A. Thalamus
    B. Hippocampus
    C. Hypothalamus
    D. Medulla oblongata

11. According to the *Journal of Advanced Nursing*, in 2019, what percentage of young adults had a fear of needles that interfered with their receiving needed treatment?
    A. 2%-10%
    B. 10%-20%
    C. 20%-30%
    D. 75%-100%

12. What percentage of Americans cite cost as the top reason they do not visit a dentist more frequently?
    A. 12%
    B. 22%
    C. 45%
    D. 59%

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QUESTIONS

13. Nationally, how much money is spent on emergency department visits for patients presenting with pain of an oral origin?
    A. $100,000
    B. $500,000
    C. $1.1 million
    D. $2.2 million

14. In the US, what percentage of dental expenditures came from private insurance resources in 2016?
    A. 12%
    B. 46%
    C. 80%
    D. 90%

15. In the US, what percentage of dental expenditures came from CMS programs in 2016?
    A. 12%
    B. 50%
    C. 60%
    D. 75%

16. What percentage of adult Americans ages 18-64 had dental insurance in 2018?
    A. 5%-15%
    B. 45%-57%
    C. 80%-90%
    D. 90%-100%

17. What percentage of GDP dollars was spent on dental expenditures in 2019?
    A. 4%
    B. 60%
    C. 90%
    D. 100%

18. Which of the following is a typical response to vasoconstrictors used in dentistry?
    A. Increased heart rate and force of contraction
    B. Increased fear or anxiety
    C. Headache
    D. All of the above

19. Which of the following are physical triggers that can induce anxiety in patients?
    A. Gagging
    B. Choking
    C. Inability to breathe when instruments are in the mouth
    D. All of the above

20. Which of the following is *not* a nonpharmacological approach to managing a dental patient's anxiety?
    A. Good communication
    B. Desensitization
    C. Utilization of nitrous oxide-oxygen sedation
    D. Distraction

21. Which dental screening tool is a four-item questionnaire using Likert scale 5-25 to identify patients from "no anxiety" to "extreme anxiety"?
    A. Modified Dental Anxiety Scale (MDAS)
    B. Dental Anxiety Scale (DAS)
    C. Dental Fear Survey (DFS)
    D. Index of Dental Anxiety and Fear (IDAF-4C+)

22. Which dental screening tool has three modules to measure dental phobia, feared dental stimuli, and an eight-item dental anxiety and fear module to assess emotional, behavioral, physiological, and cognitive components of the anxiety and fear response?
    A. Modified Dental Anxiety Scale (MDAS)
    B. Dental Anxiety Scale (DAS)
    C. Dental Fear Survey (DFS)
    D. Index of Dental Anxiety and Fear (IDAF-4C+)

23. Which of the following scents was found to lower patient anxiety and improve mood in dental waiting rooms as published in the *Journal of Physiology & Behavior*?
    A. Lavender
    B. Orange
    C. Menthol
    D. Both A & B

24. Which of the following is recommended in appointment planning for the anxious dental patient?
    A. Schedule appointments first thing in the morning.
    B. Allow extra time for appointments.
    C. Encourage rest breaks during treatment.
    D. All of the above

25. Which of the following is a reaction that occurs during a sympathetic fight-or-flight response?
    A. Increased pulse rate
    B. Decreased heart rate
    C. Bronchoconstriction
    D. Decreased glucose in blood circulation

26. Which of the following is a symptom of a panic attack?
    A. Shortness of breath
    B. Chest pain or discomfort
    C. Fear of dying
    D. All of the above

27. Which of the following anxiolytic drug classes is used to assist patients in sleeping the night before an appointment and easing anxiety either the night before or day of the appointment?
    A. Benzodiazepines
    B. Minimal sedation
    C. Nitrous oxide-oxygen sedation
    D. General sedation

28. Which of the following is a benzodiazepine used in dentistry to ease anxiety?
    A. Diazepam (Valium)
    B. Propofol (Diprivan)
    C. Ketamine (Ketalar)
    D. Dexmedetomidine (Precedex)

29. Which of the following is used in dentistry as a minimal/moderate/deep sedation agent that causes amnesia and varying degrees of sedation?
    A. Alprazolam (Xanax)
    B. Hydrocodone
    C. Propofol (Diprivan)
    D. Morphine

30. In which of the following forms of sedation does a patient completely lose consciousness, cannot be aroused even with painful stimuli, and airway assistance is necessary with possible cardiovascular function impairment?
    A. Minimal sedation
    B. Moderate sedation
    C. General anesthesia
    D. Inhalation sedation

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ANSWER SHEET

The dental practitioner's ultimate guide to adult patient fear, anxiety, and phobia

NAME: TITLE: SPECIALTY:

ADDRESS: EMAIL: AGD MEMBER ID (IF APPLIES):

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Educational Objectives

1. Incorporate an anxiety management plan that best fits their patient population.
2. Identify dentally fearful, anxious, or phobic patients and apply correct management techniques.
3. Provide more pleasant and relaxed appointments to improve both the patient and provider experience.

Course Evaluation

1. Were the individual course objectives met?

   Objective #1: Yes No Objective #2: Yes No Objective #3: Yes No

Please evaluate this course by responding to the following statements, using a scale of Excellent = 5 to Poor = 0.

2. To what extent were the course objectives accomplished overall?	5	4	3	2	1	0
3. Please rate your personal mastery of the course objectives.	5	4	3	2	1	0
4. How would you rate the objectives and educational methods?	5	4	3	2	1	0
5. How do you rate the author's grasp of the topic?	5	4	3	2	1	0
6. Please rate the author's effectiveness.	5	4	3	2	1	0
7. Was the overall administration of the course effective?	5	4	3	2	1	0
8. Please rate the usefulness and clinical applicability of this course.	5	4	3	2	1	0
9. Please rate the usefulness of the references.	5	4	3	2	1	0
10. Do you feel that the references were adequate?	Yes		No			
11. Would you take a similar course on a different topic?	Yes		No			

12. If any of the continuing education questions were unclear or ambiguous, please list them.

    _____

13. Was there any subject matter you found confusing? Please describe.

    _____

14. How long did it take you to complete this course?

    _____

15. What additional dental continuing education topics would you like to see?

    _____

    _____

Mail/fax completed answer sheet to:

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5.	Ⓐ	Ⓑ	Ⓒ	Ⓓ	20.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
6.	Ⓐ	Ⓑ	Ⓒ	Ⓓ	21.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
7.	Ⓐ	Ⓑ	Ⓒ	Ⓓ	22.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
8.	Ⓐ	Ⓑ	Ⓒ	Ⓓ	23.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
9.	Ⓐ	Ⓑ	Ⓒ	Ⓓ	24.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
10.	Ⓐ	Ⓑ	Ⓒ	Ⓓ	25.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
11.	Ⓐ	Ⓑ	Ⓒ	Ⓓ	26.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
12.	Ⓐ	Ⓑ	Ⓒ	Ⓓ	27.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
13.	Ⓐ	Ⓑ	Ⓒ	Ⓓ	28.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
14.	Ⓐ	Ⓑ	Ⓒ	Ⓓ	29.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
15.	Ⓐ	Ⓑ	Ⓒ	Ⓓ	30.	Ⓐ	Ⓑ	Ⓒ	Ⓓ

EXAM INSTRUCTIONS
All questions have only one answer. If mailed or faxed, grading of this examination is done manually. Participants will receive confirmation of passing by receipt of a Verification of Participation form. The form will be mailed within two weeks after receipt of an examination.

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