



The Psychology of Dental Fear

Words frequently associated with dentistry...

- fear
- anxiety
- pain

Are there specific things about the dental experience that have fostered and/or reinforced this association?

Dental stimuli that evoke fear:

- making the appointment
- approaching the office
- the waiting room
- the dental chair
- the smell of the office
- seeing the dentist
- feeling the needle*
- seeing the drill
- hearing the drill
- feeling the drill
- feeling as though you will gag
- having teeth cleaned
- feeling pain after the anesthetic injection

(Kleinknecht et al., (1973) J Am Dent Assoc 86:842-848)

Physiological responses evoked by dental treatment:

- tensing of muscles
- increased breathing
- increased perspiration
- nausea
- increased heart rate
- increased salivation

(Kleinknecht et al., (1973) J Am Dent Assoc 86:842-848)

How prevalent is the fear of dental treatment?

Dental Fear in the United States*

- 80% of adults are apprehensive about dental treatment
- 20% of these apprehensive adults are "highly" anxious
- 5% of these apprehensive adults completely avoid dental treatment
- Similar rates of dental fear in the population have been observed in Europe and Asia

*Getka and Glass (1992) Behav Ther 23:433-448

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What about “avoidance” of dentistry...

- Avoid calling to make an appointment
- Canceling or not appearing for a dental appointment

(Kleinknecht et al., (1973) J Am Dent Assoc 86:842-848)

The incidence of dental fear and avoidance:

- Gatchel and colleagues conducted a telephone interview survey in Dallas Texas of 161 eligible households (*J Am Dent Assoc 107:609-610, 1983*)
- Respondents were asked the length of time since their last non-emergency dental appointment and the reason for not making more regular dental visits

The incidence of dental fear and avoidance:

Respondents were also asked to rank themselves on a 10-point dental anxiety scale:

- 1 = "no fear"
- 5 = "moderate fear"
- 10 = "extreme fear"

Gatchel et al. (1983) J Am Dent Assoc 107:609-610

The incidence of dental fear and avoidance:

	Overall sample %	Males %	Females %	Last dental visit > 1 year
Low Fear (anxiety score (AS) < 5)	70.8	75.0	65.7	30.1
Moderate Fear (AS = 5, 6, or 7)	17.5	22.2	17.9	45.8
High Fear (AS = 8, 9, or 10)	11.7	2.8	16.4	54.0

Gatchel et al. (1983) J Am Dent Assoc 107:609-610

The prevalence and consequences of dental fear in Seattle:

- A telephone or mail survey was conducted by Milgrom and colleagues, enrolling 1,010 participants in Seattle (*J Am Dent Assoc 116:641-647, 1988*).
- Questions about dental fear and dental utilization were asked.
- Participants were categorized as having "high" levels of dental fear if they reported being either somewhat afraid, very afraid, or terrified of dental treatment.

The prevalence and consequences of dental fear in Seattle

- 50% of respondents reported some fear of the dentist:
 - 29.8% = "a little afraid"
 - 13.1% = "somewhat afraid"
 - 4.3% = "very afraid"
 - 3.0% = "terrified"
- The prevalence of "high" dental fear calculated to be 204 people per 1,000 population

Milgrom et al. (1988) J Am Dent Assoc 116:641-647

The prevalence and consequences of dental fear in Seattle

- There was a significant correlation between high dental fear and the length of time since the last dental visit:
- Approximately 59% of the "high fear" group had seen the dentist within the last 12 months, compared to more than 77% in the "low fear" group
- In the high fear group, 24.2% had not seen a dentist in more than 2 years, 51.2% delayed making appointments, and 9.1% frequently failed to appear for scheduled appointments

Milgrom et al. (1988) J Am Dent Assoc 116:641-647

The prevalence and consequences of dental fear in Seattle

The age of dental fear acquisition by highly fearful adults:

- 66.7% during early childhood
- 17.9% during adolescence (jr. high school)
- 15.4% during adulthood

Milgrom et al. (1988) J Am Dent Assoc 116:641-647

What happens to dental fear as people age?

- The mean age of onset for dental fear is approximately 12 years of age, continuing until age 50 (*Ost (1987) J Abnormal Psych 96:223-229*)
- The incidence of dental fear declines after 50 years of age (*Locker et al. (1996) Comm Dent and Oral Epidemiol 24:346-350*)
- Why might the incidence of dental fear decline after age 50?

Assessing the need for anesthesia and sedation in the general population

- Gordon and colleagues conducted a national telephone survey to examine the relationship between dental anxiety and the use of anxiety control measures in the general population (*J Am Dent Assoc 129:167-173, 1998*)
- It was hypothesized that dental fear/anxiety is a barrier to oral health care, and that the use of adjunctive anesthesia services is correlated with improved access

Assessing the need for anesthesia and sedation in the general population

- Of the 207 respondents (total sample = 400) that reported that they visit the dentist < 2 times per year:
 - 38% reported cost
 - 27% reported no need
 - 17% reported fear
- Approximately 15% of the total sample admitted avoiding or postponing dental appointments because of fear/anxiety

Gordon et al. (1998) J Am Dent Assoc 129:167-173

Assessing the need for anesthesia and sedation in the general population

- 18.1% of respondents reported that they would go to the dentist more frequently if they could be given a drug that would make them less nervous
- The percentage of participants that would prefer parenteral sedation or general anesthesia for dental care was approximately threefold greater than those actually receiving these modalities

Gordon et al. (1998) J Am Dent Assoc 129:167-173

Special health care needs populations...

- Behavioral approaches are often minimally effective for those with a developmental impairment
- Pharmacological management is frequently complicated by the complexities of the medically compromised
- Physical and psychological impairment make cooperation and tolerance to dental procedures difficult for these populations
- What if these patients are also fearful of dental treatment?

Reasons reported by a population of cognitively impaired population for not seeking dental care:

- cost (40.9%)
- fear/anxiety (17.2%)
- no perceived need (12.5%)
- medical problems (3.4%)
- unavailability of adjunctive anesthesia (3.4%)

From the dentist's perspective...

- A survey of dental practitioners found that 66% encounter at least one patient per week that is anxious or fearful about dental care*
- The majority of these practitioners regularly refer patients whose anxiety cannot be managed adequately in their offices
- It has been estimated that anxious patients require 20% more time in the dental chair than do non-anxious patients

* The Gallup Organization for Astra Pharmaceuticals, Inc. at the 1993 ADA Mid-Winter Meeting in Chicago

The important steps in managing the anxiety associated with dental treatment...

- acknowledging that dentistry evokes anxiety in a substantial portion of the population,
- recognizing anxiety in dental patients,
- utilizing one or more of the techniques available to reduce dental-evoked anxiety.

What are some of the clues that a patient may be anxious about dental treatment?

- the patient (or their surrogate) tells you!
- history of numerous canceled dental appointments
- poor condition of intraoral tissues
- physiologic signs:
 - speech
 - non-verbal body language
 - diaphoresis
 - cardiovascular changes
- syncope

Dental Anxiety Scale (DAS)
Corah NL (1969). J Dent Res 48:596

- Questionnaire containing four multiple choice items dealing with the patient's subjective reactions about going to the dentist, waiting in the office for the procedure, and anticipating drilling and scaling
- Can be completed in approximately 3 minutes by most patients

Dental Anxiety Scale

- If you had to go to the dentist tomorrow, how would you feel about it?
 - a) I would look forward to it as a reasonably enjoyable experience.
 - b) I wouldn't care one way or the other.
 - c) I would be a little uneasy about it.
 - d) I would be afraid that it would be unpleasant and painful.
 - e) I would be frightened of what the dentist might do

Dental Anxiety Scale

- When you are waiting in the the dentist's office for your turn in the chair, how do you feel?
 - a) relaxed
 - b) a little uneasy
 - c) tense
 - d) anxious
 - e) so anxious that I sometimes break out in a sweat or almost feel physically sick

Dental Anxiety Scale

- When you are in the dentist's chair waiting while he gets his drill ready to begin working on your teeth, how do you feel?
 - a) relaxed
 - b) a little uneasy
 - c) tense
 - d) anxious
 - e) so anxious that I sometimes break out in a sweat or almost feel physically sick

Dental Anxiety Scale

- You are in the dentist's chair having your teeth cleaned. While you are waiting and the dentist is getting out the instruments which he will use to scrape your teeth around the gums, how do you feel?
 - a) relaxed
 - b) a little uneasy
 - c) tense
 - d) anxious
 - e) so anxious that I sometimes break out in a sweat or almost feel physically sick

Scoring the Dental Anxiety Scale

- Points are assigned for the subject's choices, ranging from one point for choosing (a) and five points for choosing (e)
- The range of scores is between 4 (no anxiety) and 20 (maximal anxiety)
- Scores of 13 or 14 should make the dentist suspicious that the patient is anxious (*Corah et al. (1978) J Am Dent Assoc 816-819*)
- Scores of 15 or higher almost always indicate high anxiety

Corah's Dental Anxiety Scale

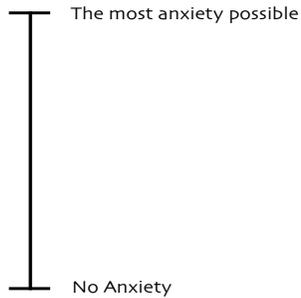
- The internal consistency reliability coefficient for the first experimental sample (1232 college students) was exceptionally high (0.86)
- The validity of the test was substantiated by a significant correlation between dentist's observation of patient behavior and the patient's DAS score
- The DAS has been evaluated in numerous populations:

Dental Anxiety Scale Scores for Various Groups*

Groups	N	Mean	s.d.
Private practice	104	6.40	2.30
Dental school clinics	750	7.20	2.96
College students	871	9.33	3.17
Outpatient emergency clinic	75	10.53	3.30
Dental Phobics	22	17.18	1.80

*Adapted from Corah et al. (1978) *J Am Dent Assoc* 97:816-819

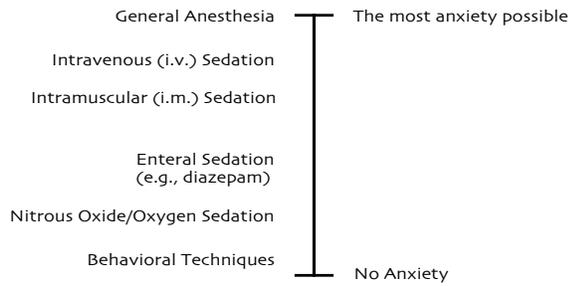
Dental Anxiety



Techniques used in dentistry for reducing patient anxiety...

- Behavioral techniques
- Inhalational techniques (nitrous oxide/oxygen)
- Oral sedation
- IM and IV sedation techniques
- General anesthesia

Strategies for Managing Dental Anxiety



Regulatory issues that affect dentists' ability to provide adjunctive anesthesia services

- Dental practice acts in practically every state have increased the amount of training that a dentist must receive in order to administer parenteral sedation or general anesthesia.
- Many states have also enacted:
 - mandatory office inspections
 - rigorous continuing education requirements

The rules and regulations...

- American Dental Association's Guidelines for The Use Of Conscious Sedation, Deep Sedation and General Anesthesia For Dentists (1999):

www.ada.org/prof/resources/positions/statements/useof.asp

- The State of Washington; Dental Quality Assurance Commission (1995):

www.leg.wa.gov/pub/wac
(WAC 246-817-701 through 795)

Local Anesthesia:

- "the elimination of sensations especially pain, in one part of the body by the topical application or regional injection of a drug."

Conscious Sedation:

- "a minimally depressed level of consciousness that retains the patient's ability to independently and continuously maintain an airway and respond appropriately to physical stimulation and/or verbal command..."
- "... produced by a pharmacological method,... that carry a margin of safety wide enough to render unintended loss of consciousness unlikely".

To administer parenteral conscious sedation, the dentist must satisfy one of the following criteria:

- Completion of a comprehensive training program in parenteral conscious sedation that satisfies the requirements described in Part III of the ADA Guidelines for Teaching the Comprehensive Control of Pain and Anxiety in Dentistry
- Completion of an ADA accredited post-doctoral training program (e.g., general practice residency) which affords comprehensive and appropriate training necessary to administer and manage parenteral conscious sedation

To administer deep sedation/general anesthesia, the dentist must satisfy one of the following criteria:

- Completion of an advanced training program in anesthesia and related subjects beyond the undergraduate dental curriculum that satisfies the requirements described in Part II of the ADA Guidelines for Teaching the Comprehensive Control of Pain and Anxiety in Dentistry
- Completion of an ADA accredited post-doctoral training program (e.g., oral and maxillofacial surgery) which affords comprehensive and appropriate training necessary to administer and manage deep sedation/general anesthesia, commensurate with these guidelines

Frequently identified problems when the use of sedation results in a "bad" outcome:

- Inadequate preanesthetic patient evaluation
- Inadequate knowledge of sedative pharmacology
- Inadequate perioperative monitoring of the patient

Strategies for Managing Dental Anxiety

