

# THE COMPLETE ASSESSMENT OF ANXIETY, FEAR, AND PHOBIA: A REVIEW

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## ABSTRACT:

Anxiety has been defined as a nonspecific feeling of apprehension towards a concrete situation that does not necessarily involve a previous experience. Dental anxiety and fear in children has been recognized as a problem in patient management for many years. It is often reported as a cause of irregular dental attendance, delay in seeking dental care or even avoidance of dental care. The literature has shown that the aetiology of dental anxiety/fear is a multidimensional phenomenon, and stimuli (real or imaginative) can contribute to the development. If a dentist is aware of the level of anxiety, fear and phobia of his patients, he is not only able to guide about the patient's behaviour, but can also take measures to alleviate these during operatory procedures. There are many methods for assessment of anxiety and fear, and in children they depend on age and intellectual development. The aim of this literature review was to discuss anxiety, fear, and phobia and various objective and subjective scales that are used most commonly to assess the degree of anxiety and fear of children in a dental setting.

**Keywords:** Anxiety, Fear, Phobia, Objective and Subjective measures.



## INTRODUCTION:

Emotion is a conscious mental reaction subjectively experienced as a strong feeling usually directed towards a specific object and typically accompanied by physiological and behavioural changes in the body (e.g., anger, surprise etc.) The cognition of danger and subsequent arousal of the nervous system (e.g. rapid heartbeat and breathing, sweating, muscle tension) is an integral component to the subsequent interpretation and labelling of that arousal as an emotional state.

### ANXIETY

The term **anxiety** was derived from the German word "Angst", which was first used by Freud in 1936. Anxiety is defined as a nonspecific feeling of apprehension,

worry, uneasiness or dread, the source of which may be vague or unknown or as a state of unpleasant feeling combined with an associated feeling of impending doom or danger from within rather than from without. Anxiety is an emotion similar to fear but arising without any objective source of danger.

**Carrobes** and **Díez-Chamizo** [1991] proposed four different perspectives for the concept of anxiety.

- Applied clinical science perspective: According to this perspective anxiety is understood to be an internal response that serves as a warning signal for the individual when danger is imminent.

- Experimental perspective: This is based on the supposition that anxiety is an instinctive reaction to certain objects or situations, which might or might not represent a real danger or a specific state of the human organism that motivates and propels someone to behave in a certain way.
- Personality research perspective: The concept of this research lies in the objective differentiation they make between state and trait anxiety. Trait anxiety is a proneness or tendency of an individual to react in an anxious way, regardless of the situation. State anxiety is defined as a transitory emotion that fluctuates over time, and is a response to a stimulus. It is portrayed as causing tense feelings as a result of an increase in the activity of the autonomic nervous system.
- Behavioural model of anxiety: In this model, anxiety is conceived as a construct that encompasses a group of motor, psycho physiological, and cognitive responses. This concept is known as the Three-dimensional Theory of Anxiety.

## **Types of Anxiety**

### Trait anxiety

Trait anxiety refers to a general level of stress that is characteristic of an individual, that is, a trait related to personality (inherited).

### **State anxiety**

State anxiety (S-anxiety) can be defined as fear, nervousness, discomfort, etc. and the arousal of the autonomic nervous system induced by different

situations that are perceived as dangerous.

### **Free floating Anxiety**

When you experience the anxiety when no dangers are present, and it seems to occur without anything triggering it, you may have what some refer to as "free floating anxiety.

### **Situational Anxiety**

It is only seen in specific situation or objects.

### **General Anxiety**

Where the individual experiences a chronic pervasive feeling of anxiousness, whatever may be the external circumstances.

### **Sub- types of Anxiety**

#### Association

This is a process of classic conditioning whereby previously neutral stimuli becomes the cause for arousal and anxiety by pairing them with pain or negative experience of others.

#### Attribution

Arousal is in the biological sphere.

#### Appraisal

Here anxiety is concerned with cognition or the way we think. It involves reconstruction of negative experiences rather than positive happenings that account for arousal of anxiety.

### **FEAR**

It denotes a normal, useful response to an active or imagined threat. Fear is

composed of an inner feeling; an outer behavioural expression and physiological changes. The physiological responses that emotional excitement causes are designed to prepare the body for the 3 F's — "fight, flight, and freeze".

### Types of fear

#### Objective or Real fear

Objective fears are those produced by direct physical stimulation of the sense organs (seen, felt, smelt or contacted) but not of parental origin which are disagreeable or unpleasant nature. Children who has had previous contact with a dentist and has been managed so poorly that undue and unnecessary pain has been inflicted necessarily develop a fear of future dental treatment.

#### Subjective or Imagined fear

Subjective fears are those based on feeling and attitudes that have been suggested to the child by others about him without the child's having had the experience personally. The young inexperienced child, hearing of some unpleasant or pain producing situation undergone by a parent or others, soon develops a fear of that experience.

### Response to fear

Normal patients respond to fear in 3 levels

1. Intellectual level: Where the child is ready to accept the situation and face the difficulties to achieve results and benefits (usually seen at the adolescent age).
2. Emotional level: Usually the child shows the fight or flight response,

which act as an instantaneous response (seen in school age).

3. Hedonic level: Usually reflected as self-centeredness thereby accepting what is not without too much concern for the outcome or nature of treatment (may be seen in very young children).

### Different types of fears corresponding to age.

- Three years- Visual fears (masks, policeman)
- Four years- Auditory fears(siren)
- Five years-Bodily harms (falling, dog, dentist)
- Six years-Many fears especially auditory and spatial
- Seven years-Deeper fears (not being liked or loved)
- Eight years- fear reduces, continuation of failure
- Nine years- few fears, but ability to compete successfully exists
- Ten years-School
- Eleven years-major fear re-emerge, health and animals
- Twelve years-fear dissipate, fear is silly.

### PHOBIA

A phobia may be defined as an irrational fear of a particular object or situation. Phobias cannot be explained away; they are beyond voluntary control and eventually lead to total avoidance of the feared stimulus.

The method of classification is concerned with the time of onset and

Place of occurrence and is divided into:

a) Endogenous.

b) Exogenous.

### 1. Endogenous Phobic Anxiety

Patients who experience this type have both spontaneous panic attacks and phobias. Patients in this group are usually multi phobic poly symptomatic.

### 2. Exogenous Phobic Anxiety

This group includes those with well-defined and mostly single phobias, e.g., spider phobias, dental phobia, needle phobias, dog phobia.

Odontophobic persons will usually not go to a dental clinic at all, or at the most only when they have an unbearable tooth ache. Often they cease brushing their teeth, because looking at the teeth is a constant reminder of not going to the dentist – a feeling which gives them great discomfort. Not going to the dentist often gives an increased treatment need, and hence their anxiety and shame increase even more. Often they evolve a social phobia as well, because of their bad tooth condition or – function, and their phobia affects their everyday life to a great degree.

Dental needle phobia: 'It is ironic that the very procedure that allows patients to be treated virtually free of pain is the one that they often fear the most,' General and dental needle phobia obviously the initial consultation, assessment and history will highlight the nature of the patient's fear or phobia. Should it become apparent that the

patient has specific concerns with the needle (either in isolation or combined with other specific or general factors) this should be investigated further.

### Prevalence of dental anxiety, fear and phobia

The main findings from the 2009 Adult Dental Health Survey included:

1. 36% of adults were classified as having moderate dental anxiety
2. 12% of adults were classified as having extreme dental anxiety
3. 30% of all adults were extremely anxious about having a tooth drilled
4. 28% of all adults were extremely anxious about having an injection
5. There was a clear pattern towards overall higher levels of dental anxiety among younger adults
6. Extreme dental anxiety was more prevalent among women than men, 17% compared with 8% respectively. There were differences between socio-economic groups in terms of the proportion of adults suffering from extreme dental anxiety:

**Pramila M and Murthy AK** (2010) reported a 23.4 % prevalence of high dental fear among 12 to 15 years old school children.

**Marya CM et al.** (2012) reported that prevalence of dental anxiety was high (50.2%) as compared to phobia (4.38%).

### The Aetiology/Cause of Dental Anxiety

Dental anxiety is a multidimensional complex phenomenon, and no single

variable can exclusively account for its development.

- 1) Personality characteristics
- 2) Fear of pain
- 3) Past traumatic dental experiences, particularly in childhood
- 4) The influence of dentally anxious family members or peers which elicit fear in a person.

### **Determinants of dental fear**

#### **1. Gender**

It has been reported that girls are more fearful than boys. For girls, dental anxiety could be more internally mediated. This suggests that dental fear and factors associated with it differ between boys and girls.

#### **2. Psychopathology and psychosocial factors**

Personality traits have been found to differ in children with and without dental fear, which has been found to be positively related to temperamental factors such as general fearfulness, lowered self-esteem, shyness, negative emotionality, pessimism and weaker attention span.

#### **3. Sensitivity and experience of pain**

Children's experiences and expectations of pain during dental care have been shown to be more common among subjects with dental fear. It has been suggested that rather than being due to invasive procedures, children's subjective perception of treatment might be decisive in acquisition of dental fear.

#### **4. Age and development**

The prevalence of children's dental fear has been shown to differ between 6 and 56% depending on the age. In several cross-sectional studies the prevalence of children's dental fear has been suggested to be lower among older children than among younger ones.

### **What are the signs that a patient may be anxious/fearful/phobic?**

The dentist can observe physiological and behavioural signs given by the patient during the consultation.

Physiological: Three physiological observable indicators are:

1. Sweating palms of hands, forehead, upper lip. You can assess the palm of the hand subtly during your handshake
2. Pulsation in the carotid and temporal arteries.
3. Depth and speed of respiration

Behavioural: Anxious and fearful patients display more movement in the waiting room, and when sitting in the chair. Signs include:

1. Fidgeting with hands or objects
2. Sitting on the edge of the chair, leaning forwards
3. Rapidly thumbing through magazines
4. Pacing
5. Changing position frequently or pacing
6. Frequent visits to bathroom.

## **Methods of assessing dental anxiety/fear/phobia**

### **Objective measures**

The psycho physiological responses produced by anxiety are associated in general with an increase in the activity of the sympathetic branch of the autonomic nervous system and which in turn result Changes occur in

1. Cardiovascular system (increased blood pressure and pulse rate)
2. Sweat glands (increased sweat production and electrical conductivity of the skin)
3. Muscles (increased muscle tone, spasmodic movements, etc.)
4. Respiratory system (sighs, feeling breathless, etc.)
5. Digestive system (dry mouth, constipation, etc.)
6. Cortisol changes in saliva.

These physiological measurements are very useful for measuring the degree of stress in a patient before and after dental treatment because physiological changes occur in the body as a result of the stress and anxiety suffered by patients during dental procedures.

### **Subjective measures**

Subjective measures can be used to assess dental anxiety. Child dental anxiety is a common and potentially distressing problem both for the child and the dental practitioner. In the subjective

Ideally, a scale should be:

1. Short in length to maximise response from the children and minimise time for administration;
2. Include items which are most relevant to the child dental experience;
3. Easily hold the attention of the child; and
4. Be simple to score and interpret.

### **Implications of anxiety, fear and phobia for paediatric dentists**

With regard to paediatric dentistry, it is important to keep in mind that anxiety can be manifest in the form of disruptive or Interruptive behaviour and by sweating and an increased heart rate. Furthermore, the effects of anxiety have been shown to persist into adulthood, which can often lead to subsequent deterioration of oral health. High levels of anxiety prevent a patient from cooperating fully with their dentist, which can limit the effectiveness of the dental treatment and prevent the early detection of pathological processes. It has been reported that poor oral health quality of health is significantly associated with high level of anxiety which in turn effect the quality of dental care that a patient receives might be affected. Many professionals consider children who show uncooperative behaviour to be one of the greatest problems in dental practice. As pointed out by Pinkham [1990], for clinical success in paediatric dentistry, behaviour management is as fundamental as dexterity and knowledge of the material to be used. Owing to the known connection between dental anxiety and uncooperative behaviour, the minimisation of preoperative anxiety

is vital for the child to cooperate fully and enables a better treatment.

### CONCLUSION:

Children show different types of behaviour in the dental clinic. Children show anxiety, fear and phobia related to dentistry so that dentist should be clearly distinguished between anxiety, fear and phobia. The anxiety in children is mainly of subjective origin. The fearful children are those who had previous contact with a dentist and have a very

bad experience. The phobic patients are those which have total avoidance of fearful stimulus. These children have a particular phobia of specific things. There is a wide variety of measures available to assess the level of dental anxiety. Most of these measures display suitable levels of internal consistency, validity, and reliability. Although all the physiological measures mentioned can be used to measure anxiety in a patient, but they all require a monitoring team, financial expenditure, and extra time in the dental clinic.

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**TABLES:**

**Table 1 - Objective measures for assessing anxiety/fear in children undergoing dental treatment.**

Objective measures	Description
Pulse Rate	Reliable and safe indicator of stress and anxiety. Increases simultaneously with stress and anxiety in the dental room May alter as a result of the physical movements of a patient during dental treatment
Blood Pressure	Reliable and safe indicator of stress and anxiety Increases simultaneously with stress and anxiety in the dental room
Electrodermal activity	Provides a direct representation of sympathetic activity Relatively free of somatic influence. High level of sensitivity

**Table 2 - Subjective measures for measuring anxiety/fear in children undergoing dental treatment.**

Subjective measures	No. Of items and scoring	Description
Venham Picture Scale (Venham, 1979)	No of items: eight pictures (each contains an anxious and non anxious boy) Scoring: Anxious boy = 1 Or non anxious boy = 0. Range: 0–8	Easy to apply. Requires 1–2 minutes to carry out. Comprehensible for a wide age range. Difficult for teenagers, because identifying with the images is difficult. The correlation with other measures is low–moderate.
Facial image scale (Buchanan, 2002)	No of items: 1 Scoring: five faces: 1 = most positive face to 5 = most negative face Range: 1–5	Easy to handle and fast to apply. Furthermore, it was affirmed that the FIS could overcome some disadvantages of the ambiguous situations presented on the VPT flash cards.

Corah's Dental Anxiety Scale (Corah and Pantera 1969), Modified Dental Anxiety Scale (MDAS) (Humphris et al. 1995)	No of items: 4 or 5* Scoring: Variety of response statements to choose from and 1 = Not anxious to 5 = Extremely anxious*Range: 4–20 and 5–25*Cut-off: 9–12 moderate anxiety, 13–14 high anxiety, 15–20 severe anxiety (phobia)	Most commonly used measure across the world. High level of reliability and predictive value. Requires less than 5 minutes to complete. Yields a narrow total score range that can be used efficiently in clinical settings.
Interval Scale of Anxiety Response	No. Of items:7 The ratio of the highest to the lowest descriptor magnitude is 21:1	Measures anxiety in any situation (before, during, and after treatment). High reliability and validity. Useful for evaluating the effectiveness of pharmacological and non pharmacological interventions for reducing anxiety.
Children's Fear Survey schedule–Dental Subscale (Scherer and Nakamura 1968)	No of items: 15 Scoring: 1 = No fear to 5 = Very frightened Range: 15–75 Cut-off: >32 anxious, >38/39 highly anxious	Useful for a dental clinic. Precise. Permits measurement of trait anxiety. The data provided are very useful.
State–Trait Anxiety Inventory for Children(Spielberger,1973)	No of items: 9 Scoring: 1 = complete disagreement to 5 = complete agreement Range: 9–45 Cut-off: >33 high anxiety	Measures state–trait anxiety. Good psychometric properties. High reliability and validity. Only used in hospitals, because it is very long and requires a lot of time to complete (8–12 min). Crying, agitation, verbal protests, disruptive behaviour, and cooperation levels cannot be registered.
Dental fear survey and modified DFS* (Kleinknecht RA)	No of items: 20 or 15* Scoring: 1 = No fear or reaction to 4 = great fear or reaction Range: 15–60 or 20–80*	Assess dental avoidance, physiologic symptoms while in dental treatment and fear of specific dental stimuli.
The Smiley Faces Program (SFP) (given by Buchanan)	No of items: 4 or 5* Scoring: seven faces: 1 = most positive face 5 = most negative face	Computerised trait dental anxiety scale, using faces as a response set, short in length, includes items that are relevant to most children's dental experience (e.g. having a tooth drilled, sitting in the dental waiting room).
Children's Manifest Anxiety Scale	No. Of items:43	Assesses the nature and degree of general anxiety in children and teenagers.

\*Revised version of the measure.