The Psychodynamics of Dental Anxiety and Dental Phobia

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Sudden or anticipatory anxiety and fear, with concomitant increased pulse rate, dry mouth, sweaty palms, and tightness in the gut, occurs at some time in everyone’s life.

Anxiety may be defined as a reaction to an unknown danger. Its source is in the unconscious. It may be described as a diffuse, unformulated uneasiness and intense apprehension that is usually reflected in a characteristic combination of visceromotor disturbances and skeletal tensions.

Fear may be defined as a reaction to a known danger. Its source is in the conscious. Fear may produce profound temporary change in the organism. If the fear is strong enough it may destroy the organism.

Fear is an integral, sometimes useful, reaction to life’s situations, but it is accompanied by restriction of action. The patient who is fearful of the dental treatment situation, but can proceed with treatment, even with some difficulty, is not the same as the phobic who avoids care at all costs until, possibly, the physical problem becomes more overwhelming than the phobic avoidance.

Simple phobias involve a single situation such as heights, flying, snakes, or dentistry. Phobics go out of their way to avoid such situations and suffer great anticipatory anxiety when faced with the thought of confronting these situations. The line of demarcation between severe fear and mild phobia is not well defined. As phobia has a disability to function associated with it, the distinction may lie in how much it interferes with that ability to function.

The statistics, according to Scott and Hirschman,15 state that 8 to 15

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per cent of the population is phobic about dental office visits and receiving
dental care. However, we all know that many of the other 85 to 90 per
cent, although not phobic, do exhibit some form of fear or anxiety before
and during treatment.

Normal patients respond to fear and anxiety on three levels. The first
is the intellectual level of response. This is the highest level. The patient
is willing to accept and face difficulties in order to achieve certain results
and benefits.

The second level of response is the emotional level. These second
level responses are divided into two types, which have physiologic as well
as psychologic significance. They may be expressed as rage, which appears
in varying degrees of resistance and hostility, an attitude leading to fight.
Or they may be expressed as fear, in varying degrees of outcries, even
panic or terror, leading to flight. In the emotional level of response we
have a recapitulation of the basic physiologic phenomena of fight or flight.
This fear response, leading to fight or flight, is an instantaneous defensive
reaction to perceived threat or danger that has survived throughout evolu-
tion.

Most phobics manage to keep the fear response in check by avoiding
the situations that cause anxiety. This is not always possible. One can avoid
heights or snakes without it affecting one’s functioning in this society, but
the need for dental care is practically universal. Avoidance behavior may
diminish fear and anxiety, but it has its consequences.

The third level of response is the hedonic. This is the lowest level.
These patients are concerned only with self, in terms of accepting what is
pleasant and rejecting what is not, without too much concern for the
outcome or the nature of the treatment. They accept what is comfortable
and reject what is not.

In the abnormal patient the reactions are similar, but only insofar as
they are composed of similar elements. There are distortions, and changes
in tone and value that in the total picture represent a phenomenon that
appears completely different from the normal. Here the patient has emo-
tional conflicts arising from the dental situation that are unresolved on
many of these levels. The patient does not handle them to the point of
resolution, either accepting or rejecting them. A state of tension or conflict
remains. The reason for the inability to resolve these conflicts may lie
outside the dental situation, and the patient’s attempts to deal with them
can lead to anxiety and panic.

On an intellectual level, these individuals are often aware of the
unreasonableness of their attitude, but are unable, without help, to cope.
They usually come for help when pain is so severe that the physical disease
assumes a primacy that cannot be denied. They can deal with the urgent
demands of the relief of pain, and very often, the severely neurotic patient
will, during the period of physical disability, appear to be well. It may be
that the preoccupation with the physical evidence of disease brings the
patient as close to a sense of his own personality, through the pressing
problems of reality, as he ever will be.

On an emotional level, these patients present with varying types of
responses to their fears. The first group presents with oral-motor problems.
Many of these patients have undergone a regression, sometimes to an
infantile level. This group includes the sucking, biting, and grinding
problems, together with their clinical symptoms.

The second group includes the hysterical reactions. The symptoms
of patients in this group are mainly a conversion and are symbolic or truly
neurotic. They have somatic complaints, delusions, and a sense of deper-
sonalization. They may exhibit many bizarre symptoms, odd feelings on the
gingivae, bad tastes, complaints of foul breath, etc. They attribute many
social and economic problems to these complaints. Here we find the
somatization of emotional problems.

Third, we find the physiologic manifestations of these emotional
problems: the psychosomatic manifestations. In this group we find fluctu-
ations in immunity to infection, endocrine disturbances, and irregularities
in salivary flow and chemistry typically noted in depressions. Here we find
all types of gingival and periodontal problems as well as those patients who
have developed temporomandibular joint dysfunction due to muscle spasm
as a psychomotor phenomenon. Miller et al., using the Minnesota Multi-
phasic Personality Inventory, (MMPI) found a positive correlation between
the anxiety state and periodontal disease. Baker et al. were able to identify
caries personality structures and periodontal personality structures.

Looking beyond the normal and abnormal responses to fear and anxiety,
it is vital to recognize the signs of impending crisis with an anxious patient.
The first and foremost is a change in the nature of breathing. It may
become irregular, there may be sighing, and the breathing may become
shallow. The second is clenching of the teeth and jaws, muscular tension,
and rigidity in the extremities. Third is sudden silence in a garrulous
individual, or sudden talkativeness in a subdued one, that is, sudden
changes in the pre-existing relationship of patient and doctor. The fourth
is restlessness and fidgeting, such as moving the foot on and off the chair.
This is a subtle expression of preparing to leave or run away. And last, the
most obvious one, a frank avowal of panic on the part of the patient.

According to Agras, "A panic attack is an intense burst of anxiety
accompanied by marked physiological uproar and many changes in bodily
feelings." Attacks may last from a few moments to several hours. Sometimes
the attack may come from nowhere, and at other times it is within the
phobic situation. Panic attacks are not associated with a simple phobia. The
term panic syndrome is used to describe the illness characterized by
repeated panic attacks and affects about 1.5 per cent of the adult population
of the United States. Phobias accompanied by panic attacks are referred to
as complex phobias. They are more disabling than the simple ones and the
disorder is often composed of multiple phobias. Frequently these repeated
attacks lead the individual to agoraphobia. The agoraphobic may not only
be housebound, but hypochondriacal, as well as suffering from dental
phobia.

Panic syndrome is the most common psychologic disorder in women
and follows alcoholism and drug abuse in men. The panic syndrome includes
not only the actual panic attack, but also anxiety, phobia, isolation, and
depression. Anticipatory anxiety, brought on by the thought of exposure
to the feared dental situation, is more common than the panic attack itself.
A recent study found that during a panic attack no irregularity in heart rhythm was noted, although the pulse rate increased by 40 beats per minute. The higher the rate, the longer the attack lasted, and the more symptoms the patient reported. This rapid rate during the panic attack causes many patients to suspect heart disease. Studies have shown a higher mortality rate for patients with anxiety neuroses than for normal people. This excess mortality can be accounted for almost entirely by the increased risk factor for death from those suffering from panic disorders. The death rate, due to circulatory disease, was more than double the expected rate.

Patients with anxiety disorders are more likely to develop hypertension, a major risk factor in circulatory and heart disease. The depressing affect of panic syndrome probably accounts for the higher than expected rate of suicide.

Fears are a “biologic implant” to protect the very young against harm, and are supposed to disappear as one grows older. Phobias develop from the remnants of these fears that do not disappear but become intensified. Phobias are longstanding unless treated. In the 5-year Burlington study, Agras et al. were able to identify phobic individuals and follow them 5 years later. Of the untreated ones ten per cent were worse, 25 per cent unchanged, 25 per cent free of symptoms, and 40 per cent improved. The high rate of improvement was mostly due to the disappearance of symptoms in children and adolescents, who did better than adults. Agras extrapolated the improvement over the 5 years and concluded that with adults it would take 40 years for the average adult to recover completely from a phobia without treatment. The phobia’s complexity influenced the length of time required for recovery, not its severity.

In the Burlington study, 20 per cent of the population reported fear of dentists and dentistry. This included 22 per cent of the female patients and 17 per cent of the male patients. Female patients were more fearful than male patients in most categories of fear. Evidence points to social conditioning as well as biologic origins as an explanation for this variation.

Various studies show that curiosity and the resulting confrontation with previously feared situations get the better of most fears. Those fears that continue into adult life would seem to persist because they have a protective value, but in some people fears with no obvious value also persist. The same Burlington study revealed a continuum between the more severe common fears and the less severe phobias, suggesting that the phobias arise from the persistence of the common childhood fears. In families, many fears are shared, but whether and to what degree genetics or environment is responsible is yet to be determined.

In 1920, Watson caused a phobia in a mentally healthy 11-month-old child by combining a frightening event with one that was previously neutral. Others also reported some interesting cases that tended to confirm Watson’s findings that phobias can be caused by association, with one very bad experience leading to a long lasting phobia. More recent studies of children exposed to bombings in World War II do not support these theories.

Laboratory studies do not verify the conditioning theory of phobia. Fears conditioned by association are not longlasting. Most conditioned reflexes disappear after a few exposures to the fear-provoking event, unlike
the persistent fear and avoidance behavior in phobia. One finding explains how a conditioned fear response persists and becomes a phobia. "AVOIDANCE of the feared situation prevents unlearning the fear response. Only if the phobic situation is avoidable, as it usually is, would we expect the phobia to be longlasting."  

Phobias may be learned from others without exposure to the feared object. Social learning can cause phobic-like behavior, with parents the best teachers. Eisenberg described a mother leaving her school-phobic twins. She "said good-bye to her twins with reassurances that she would return soon. They played on. She stopped at the door to assure them they had nothing to fear. They looked up, but continued to play. She then made a third speech in a tremulous voice: 'Don't be afraid. Mommy will be back. Please don't cry.' This time one of the twins got the cue and cried wildly."  

How many of us have experienced a similar episode, relating to dental treatment, in our offices? The overanxious parent can subtly, or not so subtly, communicate fear, thus stopping the normal development of adequate coping skills in the young dental patient.

Some individuals react intensely and in a more persistent fashion to situations that others do not find troubling. Agras states that "this suggests a control system within the central nervous system (CNS) that modulates behavior, and that experience or learning can alter the control. The CNS is a general system for modulating experience and behavior." Through behavioral pharmacological research beginning with the barbiturates in 1903 and the benzodiazepines in the early 1960s, a system for the control of fear and anxiety was identified.  

Animals were conditioned to getting food by pressing a lever. When they then were shocked, the lever pressing behavior stopped. The animals at this point exhibited the signs of fear. The use of an antianxiety drug before the experiment negated the fear response, and the animal continued to press the lever despite the mild shocking. Agras continues "if this behavior represents anxiety, and antianxiety agents such as the benzodiazepines decrease such behaviors, then we must conclude that when an animal is faced with an unanticipated and apparently alarming situation, its ongoing behavior is probably stopped by the activation of an inhibitory mechanism in the brain. The phobic demonstrates similar disruption of ongoing behavior upon encountering the feared situation. This inhibitory mechanism would be adaptive, preserving the animal from sudden danger by inhibiting further exploration. One can deduce that the benzodiazepines deactivate this inhibitory mechanism."  

There are chemicals secreted in the brain that lead to the experience of fear and anxiety and others such as gamma aminobutyric acid (GABA) that block these actions. The precise ratio may lead either to the emotionally stable or to the neurotic individual.

Physiologically, fear and anxiety are experienced as a rapid heartbeat, stomach cramps, tense muscles, headache, etc. The situation is perceived as threatening and activates the CNS mechanism. This reaction is governed by the autonomic nervous system. Adrenaline is produced. The heart rate increases, blood pressure rises, and muscles tense.

The next step in the chain is some form of action, which in the case of the phobic is avoidance. The fear reaction subsides, and the avoidance
behavior is reinforced. There are better ways of coping with feared situations than avoidance.

The principle of psychodynamics in the practice of dentistry involves a triangular approach. It concerns itself with an understanding of the patient’s needs, fears, drives, and defenses; it gives consideration to the proper handling of the patient by the dentist; and it involves the needs of the dentist himself or herself. This leads us to a set of principles for dealing with the anxious, fearful, or emotionally disturbed patient that may be called “the reality approach.”

1. The patient is granted the reality of his symptoms or complaints. By so doing, the patient’s discomfort or pain is confirmed and he is made to feel that this is a real problem being brought to the dentist. This must be apparent in the attitude and demeanor of the examining doctor. It is not a principle that can be mechanically applied but must be internally motivated.

2. The patient’s anxiety or fear requires a thorough exploration of the symptoms and complaints. The examination should not be cursory. We cannot underestimate the patient’s need for a procedure that will assure him that everything possible is being done to understand the problem and its solution.

3. A positive statement of assurance at some stage is mandatory. Examinations conducted in silence or with wise expressions and grunts are in themselves anxiety producing. Therefore, it is important to reassure the patient that the problem is understandable and that he is not alone in his difficulty. We attempt to overcome the sense of isolation, and constantly seek to establish during the examination a warm human relationship.

4. A positive statement is made that help is available.

5. The dentist states that he or she does not know all the answers to the patient’s problems (anxiety, fears, and so forth) to remove the aura of omnipotence that the preceding statement might cause. The patient might attempt to manipulate this omnipotence, as a form of magic, to cure all ills. It is, therefore, necessary to qualify this by saying that we do not know all the answers. As this disclaimer may introduce another source of anxiety, we introduce the last principle.

6. Within our limitations, this is how we can help you.

The search for effective psychologic treatment of anxiety and phobias challenged existing therapeutic theories and affected the practice of psychotherapy. At the present time, research is in an active period in two areas: the behavioral and the pharmacologic. Both of these areas are well covered in other articles in this volume. These two methods take a different approach, although there is much evidence that in the more severe multiphobias, a joint approach may work best. A brief description of the background of the two methods is in order.

In 1924, Jones reported a study on reducing children’s fears in which she demonstrated the power of a pleasurable experience to overcome a fearful one. In 1947 Joseph Wolpe developed a new therapy for fear and anxiety. He created phobias in cats by using loud noises and shocks and then treating these phobias by “reciprocal inhibition.” This method relies on the theory that the individual cannot be relaxed and anxious at the same
time. By inducing relaxation, in place of the phobia-inducing stimuli, the fear response disappeared. He used this method with human phobias by training his patients with muscular relaxation techniques and then having them imagine their feared situation rather than creating the experience. He called this new therapy systematic desensitization. He rated 80 per cent as cured and ten per cent as much improved. This compared most favorably to the Berlin Psychoanalytic Institute results for psychoanalytic treatment of phobias, which reported from 40 to 60 per cent cured or much improved.

The aim of treatment for anxiety and phobia is behavior change. It was with the beginning of behavioral therapy that measurement of results was regarded as essential. A study in 1959 dealt with two groups of phobics with height anxieties. The results for desensitization over psychotherapy were impressive: 13 recoveries and five failures, versus two recoveries and 15 failures. Behavior therapy required fewer sessions to achieve better results, and was less costly.

In 1960, in order to test the validity of behavior therapy versus psychoanalysis, Lang conducted a series of experiments with women who had snake fears. Psychoanalytic theory states that there will be no change in a symptom unless the symbolic meaning is worked through. Wolpe stated that fears and phobias could be unlearned by substituting relaxation for anxiety. Seven of 13 women in the desensitization group could hold the snake at the end of the treatment compared to only two in the control group. Importantly, the fear had not returned 6 months later. Lang concluded that "it is not necessary to explore the factors contributing to the learning of a phobia, or its 'unconscious meaning' in order to eliminate it. . . . In reducing phobic behavior it is not necessary to change the 'personality as a whole.' People can unlearn their fears, just as they learn and unlearn other things."

One ingredient common to most successful treatment is the suggestion of a positive expectancy of result. Agras et al., in a study using snake fears and relaxation and desensitization therapy, found that those who believed they were receiving therapy improved more than twice as much as those who believed they were taking part in an experiment to measure fears. In fact, those in the latter group were not much different from the control group with no treatment. The lack of an expectation of a positive outcome had almost neutralized the effect of desensitization. The experiment then went on and when relaxation was omitted from the desensitization process, the patients improved as much, demonstrating that relaxation was not essential to the treatment and that desensitization works differently than suggested by Wolpe.

Skinner observed that behavior is influenced by its effect on the environment. If it results in a reward, it will probably continue. If it results in punishment, the behavior will probably cease. Following these principles in the treatment of a phobia lead to interesting results. A patient was first praised for her ability to gradually improve performance. When praise was stopped, two things happened. The patient doubled her efforts to please the therapist but then reverted and the phobia returned. When praise was again introduced, improvement returned. It depended on reinforcement.
Improvement continued after treatment, without the presence of a therapist. Environmental feedback was an important element in learning and unlearning. Exposure of the patient with the feared situation was therapeutic by itself. Systematic desensitization works by inducing patients to expose themselves to their fearful situation. This exposure is critical in freeing patients from their fears and phobias. This same conclusion was reached by a group working at the Institute for Psychiatry in London in the 1960s who developed "implosion therapy." Instead of having the patients gradually approach their feared situation in their imagination using relaxation to minimize anxiety, the patients were asked to imagine very strong phobic scenes, and to experience every bit of anxiety that arose. The parts of the scene that caused the most anxiety were intensified in the next sessions, which continued until the patient's anxiety disappeared.

One factor was present in all the different therapies. Patients all practiced confrontation in the intervals between treatment sessions. Exposure was the critical factor in treatment, and exposure to the real situation was superior to exposure in imagination. All psychologic treatment of phobia, from psychoanalytic to implosion, works to the extent that the patient will expose himself or herself to the feared situation.

The most common form of exposure therapy involves a gradual approach to the feared situation. The first prerequisite is an accurate diagnosis, and a clear description and hierarchy of the feared situations, in order that the dentist or therapist can arrange for practice within it. The dentist must warn the patient that some anxiety will accompany effective treatment. Exposure therapy is not painless.

The practice of dentistry involves a relationship of great psychologic complexity between patient and doctor. An inability to understand this relationship is the cause of many of the hardships and failures of practice. Successful treatment must accomplish the therapeutic aims of proper dentistry and also leave the patient and dentist none the worse for the experience. To accomplish this it is necessary for the dentist to consider not only the oral cavity but the emotional state of the patient. It is essential to know what kind of patient has the disease rather than what disease the patient has.

There are, however, certain dangers inherent in a warm and empathic approach, which all of this implies. The first is seductiveness and sexual involvement with the patient. A study was made of the occupational diseases of 56 dentists who had been observed over a period of years. The anxiety state represented 42.1 per cent of all illnesses. In the age group of less than 45 years it was 52.7 per cent and over 45 it was 25 per cent. Therefore, anxiety neurosis is not uncommon among dentists. The second danger is subjectivity and lack of objectivity. Very often the nature of the material that is handled has a tendency to go beyond the realm of the actual treatment plan. It may be very interesting and lead to a lack of objectivity on the part of the dentist. The third danger is that of poor economic solutions. The dental treatment sessions may turn into "talk" sessions and little treatment accomplished. The fourth danger is poor contact with reality on the part of the dentist. The fifth is that a static type of practice may develop, one that begins to limit itself to certain types of patients. Those
who fit the personality type of the dentist are afforded a warm atmosphere and those who do not are repelled. Sixth is that of becoming a little bit of a psychiatrist. The dentist's responsibility is to understand basic psychologic modalities. But understanding them does not make one a psychologist or psychiatrist, just as recognizing symptoms of heart disease does not make one a cardiologist. It is equally bad to ignore a patient's emotional conflicts and difficulties and to proceed with a traumatic experience that the patient cannot handle as it is to ignore a patient's cardiac insufficiency and proceed with a risky general anesthetic.\textsuperscript{13}

We have stated that the dentist must avoid seductiveness, be objective, empathic, introspective, and that the treatment be patient centered. The dentist must recognize his own neurotic or selfish motivations, and develop a scientific treatment plan, for it is this plan that guards against the loss of objectivity. It prevents selfish motivation and self-centered therapy for it has, in a sense, an independent existence and represents a reflection of reality in terms of diagnostic tests and other procedures that are required to establish it. The dentist must constantly be alert to the importance of treating the patient and not the disease. The presentation of the treatment plan should be directed to the patient's ability to understand. To ask a patient to make too many decisions may create anxiety and doubt of the dentist's ability. The dentist may be authoritative but not arbitrary, and should be respectful of the patient's wishes when based on reality. Except in emergency situations, the dentist should always suggest rather than insist on treatment, never promising more than can be accomplished. When making cosmetic changes, the dentist must be sure to understand the patient's motivation in requesting them. One must be certain that the dental changes are not expected to cure nonreality-oriented emotional problems. Improved appearance may be desirable, but it will rarely cure deep-seated emotional problems.\textsuperscript{12}

The foregoing presupposes a degree of mental health on the part of the dentist. The first factor in the dentist's mental health is the proper choice of profession. Deep conflicts arise from the improper choice.

The second factor concerns itself with the physical demands of dental practice. Many causes of emotional conflict in the dentist can be related to problems of overwork, improper work habits, lack of exercise, and general physical strain. This leads to a sense of total frustration and loss of efficiency. Howard and Cunningham et al.\textsuperscript{7} point out that dentists are abnormally subjected to the ill effects of stress. The work of a dentist is physically hard. Moreover, because the majority are private practitioners, they are involved in the long-term stress and strains of building a successful practice. A study by Russell showed that in each of three different professions, medicine, dentistry, and law, generalists as opposed to specialists had a higher incidence of coronary disease, and among these professions there is strong evidence that dentists are especially prone to the effects of high stress. The stress is largely self-inflicted: the result of ambition. It has been shown that there can be a beneficial effect on stress from increased physical exercise as a means of reducing tension and improving the ability to cope with the demands of practice.\textsuperscript{14}

The third factor in the mental health of the dentist should be the
development of a special interest in some aspect of dental practice. The dentist should learn to approach some aspect of his profession with vision as a center of continuing interest.

The fourth and last factor is for the dentist to choose something outside the profession that demands his interest and provides some reward to establish a balance with the tensions and anxieties of practice.

With an understanding of the anxieties, fears, motivations, prejudices, attitudes, and emotional problems of both patient and dentist, the practitioner is free to use his or her energies and abilities to treat patients.

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