The Dentist as Biobehavioral Clinician

Samuel F. Dworkin, D.D.S., Ph.D.

Abstract: At the core of all clinical dental practice is the interpersonal interaction between dentist and patient. An expansion of the dentist’s responsibility in the unique dentist-patient relationship is suggested. Such an expanded role encourages dentists to engage the emotional and behavioral health of dental patients who are appearing in dental offices for treatment of orofacial diseases and other conditions. The term “biobehavioral clinician” is used to refer to this broadened role for the dentist. It is suggested that such a biobehaviorally oriented dentist will be a powerful ally on behalf of the health of patients, attending to more dimensions of the patient’s presentation and management than the diagnosis and treatment of oral pathobiology. It seems entirely appropriate that dentists have such a role in its future, engaging as they do millions and millions of Americans on a regular basis and a productive and collaborative dentist-patient relationship is already an accomplished fact for most dentists with most of their patients across all stages of the life span. The benefit to patients’ overall health and well-being could be tremendous and would add an enriching and personally rewarding dimension to being a dentist.

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This article offers a rationale, together with supporting data and initial suggestions, for implementing an expanded view of how dentists could contribute to the overall health and well-being of their patients. This expanded role encourages dentists to engage the emotional and behavioral health of dental patients who are appearing in dental offices for treatment of orofacial diseases and other conditions. The term “biobehavioral clinician” is used here to refer to this broadened role for the dentist who would be engaging more than the traditional biologic aspects of oral health and disease. It is suggested that such a biobehaviorally oriented dentist will be a powerful ally on behalf of the health of patients, attending to more dimensions of the patient’s presentation and management than the diagnosis and treatment of pathobiology.

The Biopsychosocial Paradigm

The overarching conceptual model for the dentist as biobehavioral clinician comes from the biopsychosocial model of disease, illness, and health. Dentists do not seem to know the term “biopsychosocial,” as consistently revealed by informal surveys conducted at clinical and scientific gatherings around the country and even the world. The term “biopsychosocial” in the present context refers to a paradigm, or model system, for integrating far-flung and diverse factors that contribute to who gets sick and who doesn’t and, in parallel fashion, for linking this same range of factors to influences on response to treatments, determining who will get better and who will not.

At the most fundamental level, “biopsychosocial” refers to a model system for explaining how people adapt to what is going on around them and then, when people get sick, how the biologic, personal, and social forces active around them overwhelm the adaptive ability of the body and the person. The central idea is that such overwhelming of the person always emerges, not from one source alone, but from an interaction of: 1) biology—biologic endowment plus the biologic history or development of the person—in interaction with 2) the person’s psychological status reflected in their thinking, emotions, stress, and behavior, and 3) the societal, cultural, historical, and physical environments in which the body and the person are inevitably enmeshed and embedded.

While the concept seems foreign or remote to dentists and even to much of dental education—it rarely appears in the dental literature—a biopsychosocial perspective seems to have found a much more favorable reception in medicine, where the biopsychosocial model for understanding health and sickness is the organizing principle around which major medical schools construct their curriculum for training and educating. My purpose here is to lay an evidence-based groundwork in support of a potential future for dentistry to engage biopsychosocial concepts and methods in some very practical ways that expand dentistry’s contribution to the overall health and well-being of its patients.
Our current understanding of the causes of and treatments for disease and illness transcends the so-called biomedical model still prevalent in some of medicine and much of dentistry, with its limiting and too narrow focus on considering only pathophysiologic factors in sickness. Such a biomedical focus would not have led Melzack to develop his Gate Control Theory of pain, let alone guided him to develop such an elegant paradigm for interpreting chronic pain symptoms as he presents in this issue of the Journal of Dental Education. Similarly, the contributions of others—including Yagiela, Feigal, and Berggren—to this special issue would not have been possible if they were not as committed to managing the person in the disease state as they are to managing the disease in the person.

A biopsychosocial paradigm views as incomplete and scientifically indefensible the biomedical model’s underlying notion that disease and illness arise exclusively from biologic (i.e., physical) causes, independent of the person’s emotions, thoughts, and behaviors and independent of the social or physical environment. Why? Because at the very least, emotions, thinking, and behavior are clearly understood to be biologic events, albeit complex biologic events that generate our sense of self and guide our human interactions. It is not only cancer or tooth decay or bleeding gums that cause somatic changes. Thinking is a somatic process: when the mind changes, the brain changes. Emotions and feeling states are somatic states as well, as even the conventional wisdom reveals when one considers how it is to be enraged or panicky or in the throes of love, pleasure, or sexual arousal—all clearly different emotional states and all clearly experienced as different somatic states. Stohler, in this issue, presents superb data regarding the relationship between chronic pain and brain function.

So, the biopsychosocial model is a scientific proposition, not a political one, nor simply a “touchy-feely,” do-good philosophy. My colleagues and I developed a schematic, adapted from research into chronic pain, especially temporomandibular disorders (TMD), to depict this model system (Figure 1) to help us integrate our own views about illness and

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Figure 1. Biopsychosocial model of illness

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disease, and to provide a model system that could both drive a research program into such disease-illness problem areas as acute and chronic orofacial pain and provide a basis for teaching health practitioners about interpreting and perhaps changing their patients’ understanding of disease and illness factors.

The schematic attempts to depict an integrated system of both normal and adaptive functioning (occurring within each box) and maladaptive excesses of response, evident as either heightened and augmented responses, or diminished and absent adaptive response patterns.

**Physiologic Signals (Aversive/Nociceptive).** At the most fundamental level, the model posits pathophysiologic signals generated by a disease process—caries, periodontal abscess, masticatory muscle, or temporomandibular joint pain. The signals are transmitted in a complex neuromatix of information processing that Melzack has been the first to describe clearly. This information system connects not only the teeth, gums and jaws to the brain, but allows those same pathophysiologic signals to reach higher centers of the brain dealing with attention, memory, emotions, decision making, and motor preparedness.

**Perception.** The initial stage of forming a subjective response involves detection and labeling of the sensory, spatial, and temporal qualities of what the patient experiences subjectively as symptoms, sometimes amplifying, sometimes dampening those signals, which can be associated with such qualifiers of sensory experience as sensations of throbbing, aching, stabbing, gnawing, and so forth.

**Appraisal.** Higher order integrative mental operations attach cognitive and emotional meaning to the perceived symptom sensations, leading to the appraisal that the person has an illness. The latter cognitive appraisal is accompanied by an emotional appraisal, usually negative, indicating that the disturbed physical state is undesirable or unpleasant, or even associated with expressions of catastrophizing, anxiety, depression, or somatization.

Behavior. Observable behaviors emerge that either are contributory to maintenance of the illness condition (e.g., bruxism in the case of TMD) or represent attempts to cope with unpleasant symptoms through verbal and nonverbal expressions of pain, limitations in social or work activity, diet modification, and increased seeking of treatment and medications.

**Social (“Sick”) Role.** Cultural and societal factors shape the illness experience by defining acceptable “sick” roles for pain patients, for example, sanctioning payments for health care and even disability. These social considerations exist in the society or culture in which the patient is embedded and serve as factors shaping the expression of illness and the nature of treatment sought.8

We are grappling here with understanding the troubled person—who is identified as experiencing an illness—as well as the troubled body—which is identified as having a disease. Organ systems have diseases, while people have illnesses; and this disease-illness status is concurrent and holistic—that is, the person simultaneously has a disease and an illness. In a ready example from dentistry, it is not useful, or accurate, to say a patient has either caries or an emotional disorder, such as dental phobia. The patient has both: caries, a somatic disease, and phobia, a pathologic emotional anxiety state. Dentists know they have a responsibility to engage the caries; but the dentist also has to decide whether or not to engage the anxiety, and if so, how. If the decision were simply to proceed with dental treatment, for all practical purposes, there would be no treatment from such a dentist, because the anxious patient would not return to a dentist that ignored, dismissed, or trivialized his psychological state. As other papers in this special issue make clear, the ways of treating the dentally anxious patient range from treating the anxiety by drugs (see Yagiela, this issue) to treating the anxiety by behavior modification (see Feigal, Berggren, this issue). The dentist is managing both psychological/psychosocial factors and the biologic/dental-clinical factors—the dentist is, in fact, a biobehavioral clinician! The opportunities to view the dentist as a biobehavioral clinician are many in dentistry, as they are in medicine; we will explore the dental opportunities more fully later on.

**Historical Perspectives and Current Trends**

In an editorial accompanying a recent special issue of the *Journal of the Indiana Dental Association* devoted entirely to “Psychosocial Dynamics of Dentistry,” the editor states: “For dentistry to continue to grow as a full partner in the health care environment of the future, it will need to embrace a
broader view of its role and seek closer integration with other behavioral and biomedical disciplines, especially those which have contributed scientifically to our understanding of the psychosocial dimensions of oral disease and oral health.9

There are some powerful historical examples that can be cited to demonstrate that the influences on who gets sick or not and who gets better or not transcend simply the presence of a disease pathogen. The following are well-documented examples that clearly reveal how interwoven the biology of the individual is with the psychologic and social forces that may contribute to the onset or maintenance of disease-illness conditions:

**Moving Targets for Gastric Ulcers**

In 1900 and in 1960, the incidence and prevalence statistics for gastric ulcers were virtually the same; yet, in 1900, gastric ulcers were a disease of young women, while in 1960, gastric ulcers were a disease of middle-aged men. The scientific challenge is to explain how cultural changes occurring over a few decades can exert a force that can select a different target group for who gets a particular kind of disease.10

**Hysterical Conversions: Surgery in 1900 versus Non-Diagnosis in 2000**

At the end of the nineteenth century, Freud observed that women who underwent strange behavioral and emotional changes referred to as hysterical conversions,11 such as sudden onset of paralysis immediately preceding a marriage, were treated by surgery considered specific to that ailment. That is, they received a hysterectomy as the treatment for hysteria—a treatment that seems nothing less than bizarre to us today. It was Freud’s genius to reject this way of thinking, with its mind-or-body dichotomy, and look beyond the prevailing biomedical model of the day, which rigidly held that all manifestations of disease are caused by pathobiology alone. The meaning of an event, Freud was the first to systematically theorize, can be as powerful a determinant for what the body does as the presence of a pathogenic organism, trauma, or even a genetic defect. Although not using this exact terminology, Freud introduced the idea that one has to look for the “behavioral pathogen” as well as the biologic pathogen. Today, of course, many feel that Freud went too far in limiting the scope of behavioral pathogens to sexual and aggressive instincts,10 but he is almost universally credited with the basic insight into “meaning” as a contributor to physical state. It is important to note that the “hysterical conversion reaction” has become so rare that it has been eliminated from the standard reference work, the *Diagnostic and Statistical Manual of Mental Disorders*, 4th edition (DSM-IV) as a psychiatric disorder.12

**Evidence-Based Change to a Standard of Biobehavioral Care in Anesthesiology**

A standard of care in anesthesiology was introduced around 1962 based on findings from behavioral medicine research, demonstrated repeatedly in carefully controlled studies. These studies found that when the anesthesiologist visits the patient the night before an operation and provides an explanation of the anesthesia process, distinguishes differences between feelings from anesthesia and feelings from the surgery, and is supportive and answers questions, these nonbiologic interventions—information, reduction in anxiety, support—modify the body, so that less general anesthesia is used, hospital stay is shorter, pain level is lower and recovery is more uneventful. Standard practice for anesthesiology now is to conduct such pre-operative visits.13

**Biomedical versus Biopsychosocial Models for Medicating Chronic Pain**

In this issue, Dionne presents important current information on narcotic use and chronic pain. Historical perspectives on changing vogues in prescribing narcotic medication are most relevant, and demonstrate how biopsychosocial factors merge to shape treatment choice and patient welfare in this arena. The first multidisciplinary pain center was created at the University of Washington in Seattle under the inspired leadership of John Bonica, M.D., who saw chronic pain as an illness problem requiring both interdisciplinary assessment teams and interdisciplinary pain management teams.14 The most critical clinical problem confronted in dealing with chronic pain was a behavioral pathogen in the form
of abuse of narcotic analgesics resulting in narcotic addiction associated with seeking pain relief. Pain clinics, using an exclusively in-patient treatment approach and devoted to treating the most common forms of benign chronic pain, such as low back pain, tension headache, and even TMD, adopted behavioral management strategies coupled with a pharmacological innovation in the form of a pain cocktail—typically, methadone and an antihistamine—from which the methadone was gradually titrated out. After the addicted pain patient was detoxified and no longer addicted to narcotic analgesics, the second phase of treatment began in the form of a chronic pain behavioral rehabilitation program introduced by Wilbert Fordyce, Ph.D., a behavior modification psychologist working in the context of rehabilitation medicine.\textsuperscript{15} Fordyce conceived of the chronic pain problem—he introduced the term “chronic pain behavior”—as requiring a biopsychosocially derived rehabilitation model, not a curative model, for chronic pain management. Behavioral therapies based on operant behavior principles were introduced to return people to productive lifestyles, largely without attending directly to the pain complaint. The impact of these early concepts about nonmalignant but highly prevalent chronic pain as a multidimensional biologic, psychologic, and social problem\textsuperscript{16,17} resulted in a treatment approach that eliminated making available to chronic pain patients any narcotic medication (other than methadone during the detoxification phase), so that the last place in the world where one could get strong pain medication, at least in the form of narcotic analgesics, were the pain clinics of the United States.

And what happened? The behavioral pathogen of narcotic addiction in chronic pain patients dropped to such low levels among pain patients that, within a few years, there was no longer a need to hospitalize any but a very few chronic pain patients for detoxification and substance abuse behaviors. All interdisciplinary pain centers in the United States, including the one at the University of Washington, became out-patient centers, focusing on rehabilitating dysfunctional or pathogenic pain behaviors. In effect, chronic pain management evolved from a reliance on a biomedical model that emphasized almost exclusively pharmacological approaches, to the current reliance on the biopsychosocial model for multidisciplinary pain diagnosis, prevention, and treatment.\textsuperscript{18} It nevertheless remains the case currently that this biopsychosocial model, when applied to chronic orofacial pain, including TMD, has not been universally accepted, especially among some non-university and other non-scientifically based proponents of TMD management.

Unfortunately, as recent stories on page one of the \textit{New York Times}\textsuperscript{19} and the cover of \textit{Newsweek} magazine\textsuperscript{20} dramatically reveal about the abuse of chronic pain medication, changes in medical management of chronic pain have once again begun to sanction widespread use of narcotic analgesics for the most common forms of benign chronic pain, albeit in the service of well-intended palliative medicine. It is especially unfortunate that this shift has not been accompanied by adequate research—hence is not really evidence-based—and, it seems fairly obvious, is associated with a great deal of promotion from pharmacological manufacturers addressed directly to consumers. In any event, for present purposes it is sufficient to point out that the re-emergence of chronic pain patients addicted in appreciable numbers to narcotic analgesics is not exclusively a biologic problem. Clearly, understanding the dilemma of chronic pain continues to require multidisciplinary approaches reflected in the use of a biopsychosocial model—as today’s headlines make abundantly clear.

The concept of behavioral pathogens, alluded to earlier, means that not only are pathologic organisms and pathologic processes (e.g., inflammation or tumor) involved in causing or maintaining human disorders, but behavioral pathogens also can be identified which, sometimes most directly and sometimes in subtle ways, cause us to get sick, stay sick, and resist sound treatment. Research estimates are that approximately 40 percent of the deaths in America are from behavioral pathogens, that is, pathologic behavioral mechanisms producing, contributing to, or maintaining pathologic states of the body. The use of tobacco and alcohol, unsafe sex practices, unsafe driving, poor nutrition, physical abuse, and lack of exercise result in about 60 percent of our hospital beds being occupied by people with disease conditions. Yet only 7 percent of studies by the National Institutes of Health are devoted to understanding those behavioral mechanisms.

### Implications for the Health Profession of Dentistry

If dentistry represents a specialized domain of health care—and dentists must decide the extent to which dentistry is or is not a major health profes-
should it not be the case that the same complex biopsychosocial forces interacting to modulate disease and illness elsewhere in the body, as is implied by the discussion to this point, also be manifest in disorders affecting the orofacial and dental region? And if behavioral pathogens contribute to the onset and course of a condition or interact with its treatment, should not dentists be able to detect the presence of such behavioral pathogens and provide guidance and assistance at some level toward their prevention or amelioration?

I suggest two areas in which behavioral pathogens are especially important with regard to dentistry’s responsibility to maintain the health and well-being of its patients. One of these is most immediately relevant to dentists’ clinical activities and concerns behavioral pathogens that are directly related to soft and hard tissue disease conditions of the orofacial region. The second represents a new clinical arena in which dentists can play an important role, perhaps even life-saving in extreme instances, in redirecting patients’ lives away from maladaptive, negative emotional and behavioral patterns toward the reestablishment of a more positive sense of well-being and a more constructive lifestyle.

Behavioral Pathogens, Oral Medicine, and General Dentistry

Turning to the interactions between behavioral pathogens and orofacial disease with which dentists are already confronted, the behavioral pathogens listed in the first column of Table 1 (presented in a brief “matching test” format) could probably be correctly linked by oral medicine specialists and, hopefully, many dentists to corresponding oral pathologic conditions listed in the second column. In the oral cavity, these behavioral pathogens have important disease consequences—among the most serious that dentistry as a profession confronts: mucosal pathology, including oral malignancy, oral manifestations of systemic diseases, notably AIDS and malignant metastatic cancer, and oral diseases associated with the various uses of tobacco.

Table 1. Systemic and local behavioral pathogens (Column A) and oral pathology consequences (Column B): a matching challenge for dentists

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
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<tbody>
<tr>
<td>Smoking tobacco</td>
<td>Mucosal disease</td>
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<tr>
<td>Smokeless tobacco</td>
<td>Orofacial injury</td>
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<tr>
<td>Alcohol abuse</td>
<td>Periodontal disease</td>
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<tr>
<td>Unsafe sex</td>
<td>Dental disease</td>
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<tr>
<td>Unsafe driving</td>
<td>Oral manifestations of systemic malignancy</td>
</tr>
<tr>
<td>Poor nutrition</td>
<td>Acute orofacial pain</td>
</tr>
<tr>
<td>Physical abuse</td>
<td>Chronic orofacial pain</td>
</tr>
<tr>
<td>Parafunctional behaviors</td>
<td>Oral manifestation of sexually transmitted disease</td>
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<tr>
<td>Lack of exercise</td>
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</table>

To the list of potent behavioral pathogens that operate in the arena of oral medicine, depicted in Table 1, there can be added a much longer list, shown in Table 2, which indicates potential biobehavioral interactions between every arena of clinical dentistry and how patients think, feel, and behave. Note especially that, in addition to listing behavioral pathogens associated with diseases of oral structures, Table 2 highlights the coexistence of “behavioral antidotes”—healthy behaviors that function as preventive or treatment remedies that dentists can, and often do, introduce and foster. These behavioral antidotes have the potential to prevent or minimize the course of disease, alleviate symptoms and/or generate the capacity for increased self-control over the body’s responses to wanted and unwanted influences from the physical, emotional, and social environment. Use of a biobehavioral model allows the hypothesis that if multiple non-biologic (i.e., psychological and social) factors can contribute to the onset and maintenance of disease, then these same nonbiologic factors might also have the potential to contribute to prevention and treatment.

Self-Care as a Behavioral Antidote

Increasingly, attention is being paid to the need to enroll patients in their own self-care component for virtually every medical condition, for example, self-examination for early detection and prevention of breast cancer or monitoring diet for management of diabetes and hypertension. These self-care adjuncts to professionally delivered health care services aim both to reduce behavioral pathogens and to increase behavioral remedies—so-called healthy behaviors—under a patient’s control. To demonstrate the potential of beneficial self-control in the management of illness, my colleagues and I conducted a randomized clinical trial (RCT) to test the efficacy of a biobehavioral intervention that contrasted usual conservative treatment of TMD delivered by clinical TMD specialist dentists with a structured psycho-educational self-care intervention delivered by den-
given hygienists in lieu of the usual treatment by a dentist. The self-care treatment was targeted to those clinic cases, independent of TMD physical diagnosis, who reported minimal levels of psychosocial dysfunction—that is, who showed minimal pain-related interference with daily activities. The conceptual basis for this research was provided by our biopsychosocial model, which suggests that if biological, psychologic, and psychosocial factors interact to influence the expression of pain or other undesired symptoms and behaviors, then interventions targeted to any of these factors—the behavioral as well as the physical—may modify the expression of pain and dysfunction. We used the Graded Chronic Pain Scale incorporated in Axis II, or psychosocial portion, of our Research Diagnostic Criteria for TMD (RDC/TMD)24 in this RCT to target subjects who exhibited minimal TMD-related psychosocial interference. This group of subjects and a control group were perfectly comparable on all the common physical parameters that contribute to a TMD clinical diagnosis.

At the study’s one-year follow-up, while both groups showed improvement in all clinical and self-report categories measured, those participating in the tailored self-care treatment program compared to those randomized to receive usual TMD treatment showed: a) decreased TMD pain; b) decreased pain-related interference in activity; and c) reduced number of masticatory muscles painful on clinical examination and decreased number of visits to a dentist for TMD treatment. No patients participating in the RCT reported adverse physical or personal effects. Ability to cope with TMD and knowledge concerning TMD were significantly enhanced for the self-care group when compared to the usual-treatment group one year after treatment ended. Patient satisfaction with treatment received, while high for both groups, was nevertheless significantly higher for the self-care group.25

For us, the significance of the study is that the approximately 40 percent of the TMD population seeking dental treatment who, independent of physical diagnosis, meet the criteria set by our RDC/TMD measure of their psychosocial adaptation to TMD pain can learn to implement structured self-care regimens that leave them with less pain and interference with activities of daily living. Furthermore, they can accomplish this without conventional treatment from a dentist other than a careful initial clinical evaluation of their TMD condition.

### Table 2. Behavioral science domains and clinical dentistry arenas

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<thead>
<tr>
<th>CLINICAL DENTISTRY ARENAS</th>
<th>BEHAVIORAL SCIENCE DOMAINS</th>
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<tbody>
<tr>
<td></td>
<td>HEALTH PSYCHOLOGY/HEALTH BEHAVIORS (FACILITATE POSITIVE BEHAVIORS)</td>
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<tr>
<td>Endodontics</td>
<td>Pain control</td>
</tr>
<tr>
<td>Oral Medicine</td>
<td>Primary prevention studies</td>
</tr>
<tr>
<td>Oral Surgery</td>
<td>Compliance/informed consent</td>
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<tr>
<td>Orthodontics</td>
<td>Orthognathic/TMJ surgery: expectations</td>
</tr>
<tr>
<td>Pedodontics</td>
<td>Compliance/acceptance</td>
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<tr>
<td>Orthodontics</td>
<td>Expectations/consent</td>
</tr>
<tr>
<td>Periodontics</td>
<td>Disease prevention</td>
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<tr>
<td>Prosthodontics</td>
<td>Developmental issues</td>
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<tr>
<td>Restorative Dentistry</td>
<td>Nutrition</td>
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<td></td>
<td>Prevention</td>
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<td></td>
<td>Compliance/acceptance of prostheses</td>
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<td></td>
<td>Prevention</td>
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A New Role for Dentistry: Mental and Emotional Health of Patients

One of the first, very powerful and most gratifying opportunities for me to observe personally how a dentist can have a profound effect on the life of a patient came when I was practicing dentistry in Manhattan and serving as an attending dentist at an institution for emotionally disturbed children. In this institutional setting (where the previous dentist was referred to as “the butcher” by the young patients), the opportunity arose to make dental care part of the overall therapy and rehabilitation of the disturbed child. As a reward for their compliance with their personal therapy program and for making good progress in rehabilitating their lives, the institutionalized teenagers were allowed to come to the author’s private practice office in Manhattan for a dental visit. They could spend some time on their own in New York City and some time getting their dental needs met. The institution’s biobehaviorally oriented program for the delivery of dental care allowed dentistry to be a reward—a positive reinforcer, in the jargon of behavioral psychology—for the larger issue of the child’s returning to an independent, self-managing, useful life.

As I have indicated, the notion of the dentist as a biobehavioral clinician encompasses two domains. The first is the extension of a dentist’s clinical activity to include modification of behaviors that directly influence oral health, through the role of educator and intervener, in the areas of diet, smoking, high blood pressure, diabetes, cancer, substance abuse, personal abuse, even safe sex—things dentists don’t often do, even though, in the aggregate, they see millions of people a year who could benefit from such direction. Within this domain, dentists would engage patients the way physicians are expected to do, the domain of the physician being every aspect of the patient’s well-being at each stage of life. The difference, of course, is that for dentists, oral health and oral disease would be the springboard for these aspects of biobehavioral clinical activity. In my own personal experience over decades of attempting to be such a biobehavioral dentist-clinician, attending to these expanded arenas was rewarding and did not interfere with the delivery of high-level primary dental care. Indeed, my practice flourished as it became known that I was interested in all the big and little issues surrounding not only the health of the oral cavity, but the overall health and well-being of my patient.

The second domain in which a biobehaviorally oriented dentist would function is new and engages an arena that is probably foreign to most practicing dentists. I refer to dentists’ potential role as a critically important, albeit adjunctive, resource on behalf of the overall mental and emotional well-being of patients.

As rationale for this new role, consider that about one-half of all Americans visit the dentist each year, and more than 80 percent see a dentist within three to four years (see J. Brown, this issue). Dentistry has attempted to capitalize on this vast clinical pool, principally by recommending that dentists screen their patients to prevent or limit damage from widely prevalent physical diseases, for example, hypertension, cancer, and perhaps diabetes—systemic health conditions certainly potentially related to oral health, but more importantly, related significantly to overall health, well-being, and even longevity. Dentists have already integrated into their office practice regimens compliant with requirements for antibiotic prophylaxis for certain patients, according to guidelines prescribed not by dentistry but by their medical specialist colleagues.

Using these physical medicine instances as important provocative examples, I would like to suggest that dentists similarly consider taking on, for the more than one hundred million people who visit the dentist annually, screening for early detection of mental disorders, principally depression, anxiety and panic disorders, and somatization (the latter defined as the tendency to report and seek treatment for multiple nonspecific physical symptoms). It should be noted that problems of physical, mental, and substance abuse are equally relevant here, but the present discussion is limited to a consideration of emotional disorders.

To provide support for this suggested new role for dentists as biobehavioral clinicians, consider the well-established findings depicting the burden of mental illness in this country, listed below from the Surgeon General’s report on mental health in the United States.26

- One in five Americans experiences a mental disorder in one year.
- Mental illness ranks second in disease disability burden.
- Fewer than 50 percent of those with a mental disorder use mental health services.
- Primary care physicians diagnose 50 percent of mental disorders.
Again, the context here is that the people bearing this burden of mental illness are Americans who also go to the dentist in nearly universal numbers. It is especially noteworthy to observe that it is primary care physicians, not mental health service providers such as psychiatrists or psychologists, that make about 50 percent of all major depression diagnoses. Mental illness is prevalent in this country and can have devastating consequences for many. Those experiencing such conditions need all the help they can get. And from the outset, it is important to make make clear that one does not need to be a trained psychologist or psychiatrist to detect signs of emotional upset, to provide support and direct help, or, of course, to refer to a mental health specialist.

Most mental illness is first detected and treated in primary medical care settings. For example, of women who qualify for a DSM-IV diagnosis of major depressive disorder, by a margin of more than two to one, those women seek out primary medical care over psychiatric care. And, in the present context, it seems both reasonable and important to ask: Don’t dentists also see these same people?

Epidemiology of Mental Disorders

Table 3 summarizes the prevalence rates in the United States for the most common mental disorders, depression, panic, anxiety and phobia; included as well is the prevalence rate for somatoform disorder. Depressive Disorders. These prevalence rates for depression are considered conservative estimates. They indicate that about 10 percent of men and up to 25 percent of women will experience a diagnosable depressive disorder in their lifetime. Emotional disorders decrease with age, and the likelihood of experiencing a depressive disorder is therefore higher for those under fifty to sixty years of age.

Anxiety. Table 3 also gives the prevalence rates for the most common anxiety disorders diagnosed by DSM-IV criteria. Of particular relevance is the high prevalence of specific phobias, including dental phobia. We know about the impact of dental phobia on dental health, and in this area, at least, dentists are doing rather well. Yagiela, Feigal, and Berggren, in their contributions to this issue, each deal with the management of dental anxiety and phobia in children and adults by pharmacologic and behavioral modalities. Anxiety disorders other than specific phobias also take a toll on people’s lives, and dentists may readily become competent at screening for such disorders and making recommendations or referrals for their management.

Somatoform Disorders. Apparently less familiar to dentists is the DSM-IV category of somatoform disorders, comprising a group of psychiatric disorders whose central characteristic is an excessive focus on the body, manifest clinically as the presentation of multiple nonspecific physical symptoms for which treatment is sought. Somatization disorder and pain disorder are the two somatoform disorders of greatest relevance here. Somatization disorder is diagnosed by the presence of at least eight nonspecific physical symptoms, which are distributed across several organ systems and which are not better explained by another condition. Pain disorder is diagnosed when a similar pattern of nonspecific physical symptoms is presented, not better explained by another condition, and where the predominant symptom is chronic pain. The DSM-IV diagnosis of somatoform disorder occurs with lower frequency than the mood disorders in the general population. However, in pain clinics, including TMD clinics, the prevalence of somatization and/or pain disorders can reach as high as 40-50 percent.

Somatization, although a well-recognized psychiatric condition, is poorly understood and not easily detected by physicians or dentists. Although the formal psychiatric diagnosis requires the presence of eight nonspecific physical symptoms, it is now well established that the tendency to report up to five nonspecific physical symptoms is not only much more common, but is heavily associated with the remaining major clinical characteristics of a somatization disorder, namely, excessive reliance on health

Table 3. Psychiatric disorders in the United States: lifetime prevalence for anxiety disorders, depression and somatoform disorders

<table>
<thead>
<tr>
<th>PSYCHIATRIC DISORDER</th>
<th>LIFETIME PREVALENCE</th>
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</thead>
<tbody>
<tr>
<td>Depressive Disorders</td>
<td></td>
</tr>
<tr>
<td>Major Depression: Men</td>
<td>5-12%</td>
</tr>
<tr>
<td>Women</td>
<td>10-25%</td>
</tr>
<tr>
<td>Major Depression in those with a</td>
<td>25-60%</td>
</tr>
<tr>
<td>predominant medical condition</td>
<td></td>
</tr>
<tr>
<td>Anxiety Disorders</td>
<td></td>
</tr>
<tr>
<td>Panic Disorder</td>
<td>1.5-3.5%</td>
</tr>
<tr>
<td>Specific Phobias</td>
<td>10.1-11.3%</td>
</tr>
<tr>
<td>Generalized Anxiety Disorder</td>
<td>5% (approx.)</td>
</tr>
<tr>
<td>Somatoform Disorder</td>
<td>0.2-2%</td>
</tr>
<tr>
<td>(&gt;8 somatic symptoms)</td>
<td></td>
</tr>
</tbody>
</table>
care and medications, nonresponsiveness to rational explanation, minimal commitment to the potential efficacy of self-care healthy behaviors, and the presence of at least transient emotional disorders, especially anxiety and depression.29,30

The reason dentists should be concerned with the detection of somatization and pain disorders is that people experiencing these somatoform disorders seek frequent medical care for relief of the unpleasant, disturbing, and frequently painful physical symptoms they are experiencing. These multiple physical symptoms—real enough in terms of discomfort and limitations on the person—do not correspond, however, to diagnosable medical or dental diseases and, typically, are not responsive to physical treatments. In the arena of TMD, for example, dentists, unaware of these relationships, may be at risk for responding to all TMD patients in a relatively undifferentiated manner, as though presenting symptoms were necessarily related only to pathophysiology in the stomatognathic system. In fact, when a somatoform disorder is present, and chronic orofacial pain complaints, including TMD, are presented for treatment by a dentist, the dentist may overlook the likely presence of numerous coexisting pain and other somatic symptom clusters which may confound, for example, the TMD diagnosis and lead to specific treatments for a particular disorder, in this case TMD, when the illness in the person is more widely distributed than the disease-oriented TMD treatments alone could address. To underscore the importance of attending to mental disorders in clinical dental practices, Figure 2 shows how common formally diagnosable psychiatric disorders are in patients presenting with TMD.

Suicide, the Surgeon General, and Dentistry

There is an additional critical component to suggesting that dentists attend to the emotional well-being of their patients that warrants attention—that is, the detection of those at risk for suicide and the potential for preventing suicide and suicide attempts. Relevant data and recommendations from a recently released report of the Surgeon General of the United States dealing with suicide in America31 include the following:

• Every seventeen minutes a life is lost to suicide.
• Suicide is the eighth leading cause of death in America.
• Among teenagers, suicide is the second leading cause of death.
• Males are four times more likely than females to die from suicide.

Figure 2. Prevalence of DSM-III-R Axis I disorders: acute and chronic TMD cases and base rates
• It is advisable to conduct routine screening for suicide risk factors in primary medical care.
• In pediatric settings, survey forms should screen for suicide risk factors.

The Surgeon General of the United States is seeking to enlist the aid of health professionals in various categories to detect and prevent suicide, especially in children. Is it not telling that dentists are not on his list of health care providers who could make a difference in the rates of Americans’ self-destructive behaviors? In a very real way, this portion of my discussion is simply extending the Surgeon General’s about emotional problems in general and suicide in particular, to include a role for dentistry.

In an ongoing epidemiologic study being conducted at the University of Washington inquiring into chronic pain in youth and adolescents, because of the well-known association between depression and chronic pain, including chronic TMD, as we have seen, children ages eleven to seventeen are asked questions about depression, including these two questions about suicidal ideation:
1. Are you thinking about suicide?
2. Are you doing any self-destructive behaviors?

A surprisingly high number of children answer affirmatively to one or both questions—about two to three per month of children aged eleven to thirteen, in this particular study, say they have suicidal ideation or have done self-destructive behaviors. Again, it seems most relevant to remember that each of these children is someone’s dental patient! Many dentists form strong, long-lasting, and meaningful relationships with their younger patients, as well as with adults. It seems natural to recommend that dentists take on the important public health role that the Surgeon General is requesting other health care providers to adopt, that is, to screen patients to detect and prevent suicidal ideation and behavior, especially in young people.

It seems reasonable to assert that screening for the most common mental disorders of depression, anxiety, somatization, and suicidal ideation and behavior is a natural extension of how dentists gather information about the physical disease status of their patients. Such screening is not hard to do. The idea is not that dentists would diagnose depression, anxiety or somatization, but that they would screen for it, using relatively simple questionnaires that all their patients would fill out. Such screening practices are followed for every patient coming to the University of Washington oral medicine clinics, using standardized questions from well-known symptom checklists. It is clearly beyond the scope of the present discussion to describe in detail the actual methods and questions dentists might incorporate into their patient database, but some guidelines on how such information could be used by the biobehaviorally oriented dentist can be provided.

The general approach for using information from screening questionnaires inquiring into mental and emotional disorders would be for the dentist to:
1) scan the patient-entered questionnaire responses to determine if the patient is currently experiencing or perhaps at risk for experiencing any of these emotional disorders; and 2) use screening criteria (which are available for the measures being used) as guidelines for determining whether a patient is at risk for the common mental and emotional disorders of anxiety, somatization, depression, or suicidal ideation and behavior. To the list of mental disorders and emotional conditions for which dentists may be uniquely suited to serve as screening agents should be added the problems of abuse—physical, emotional, and substance abuse—all of which are more prevalent than is commonly supposed, all of which can have the most profound consequences for health and overall well-being, and all of which, to the extent they are present in the population, are, per force, comparably present in dental practices.

The primary data about the patient’s mental and emotional status would come from well-established and easy-to-use screening questionnaires, with follow-up by the dentist as appropriate after review of patient-provided data. Patients, of course, are always free to not answer sensitive questions if they so choose, and it should be made very clear to the patient that under no circumstances would receipt of dental care depend on whether the patient chooses to respond to such questions. Again, it seems appropriate to re-emphasize that the primary screening data for these sensitive problems originate with the patients themselves, and therefore do not originate as speculations or interpretations on the part of the dentist; the dentist is acting to follow up on information the patient has provided that may need further clarification. Such an approach can minimize the likelihood that dentists will be perceived as prying into uninvited arenas of the person’s life. Instead, dentists are understood to be reflecting on and seeking to clarify information about emotional status that patients have provided, as part of the dentist’s routine inquiry into the overall health of their dental patients.
Depending on the quality and duration of the dentist-patient relationship, the dentist might provide primary level support and/or counseling recommendations or make a referral to a mental health practitioner. Rarely would it be necessary, or even recommended, to institute such an encounter based on screening information early in the dentist-patient relationship. Typically, it would probably be advisable to defer making reference to the significance of the patient’s responses until a trusting, empathetic, and collaborative relationship had evolved.

Summary

The purpose of this report on the dentist as biobehavioral clinician is to lay out a possibility for dentistry in the future to engage such important domains of patients’ lives as their mental and emotional health. One would certainly not expect one’s personal physician to be indifferent to the depression or anxiety that patients present. Indeed, such a recommendation for dentistry would be entirely consistent with a comparable change in primary medical practice, where much evidence is available demonstrating the feasibility and the effectiveness of having primary care medical doctors take on responsibility for detecting and engaging at some level the most common mental disorders, namely, depression, anxiety, and somatization. It seems entirely appropriate that dentistry have such a role in its future, engaging as it does millions and millions of Americans on a regular basis, with the establishment of a productive and collaborative dentist-patient relationship already an accomplished fact for most dentists with most of their patients across all stages of the life span, including not only children, youth, and adolescents, as emphasized by the Surgeon General, but extending to adults as well and especially perhaps to the largest growing segment of the American population, the elderly. Such an approach would certainly embody the role of the dentist as a biobehavioral clinician. The benefit to patients could be tremendous, and an enriching and personally rewarding dimension would be added to being a dentist.

A paradigm has been presented that has emerged as an alternative to the biomedical model for diagnosing and managing disease. This alternative model, with the unwieldy label of “biopsychosocial model,” provides a paradigm that is immediately applicable to every aspect of dentistry, just as it has been shown to be relevant to every aspect of disease and illness. In particular, attention was directed to the possibility that dentists could play a most beneficial role in helping their patients manage what appears to be a burgeoning of emotional and mental disorders in this country and around the world. This expanded role for dentists does not require expertise as a mental health professional; indeed, many successful dentists already have such long-standing and significant relationships with many of their patients that, in fact, they are already serving as biobehavioral dental clinicians in every sense of the term addressed here.

Acknowledgment

I express my deepest appreciation to the Washington Dental Service Foundation for the honor they have bestowed by designating me as the Fourth Washington Dental Service Foundation Distinguished Professor in Dentistry. Among its many salutary attributes, this high honor has given me the opportunity to present to the dental profession the collective wisdom, knowledge and experience of the eminent authors who have contributed to this special issue of the Journal of Dental Education.

REFERENCES


