BEHAVIORAL SCIENCE AND DENTAL PRACTICE

DWORKIN • FERENCE • GIDDON

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SAMUEL F. DWORKIN, D.D.S., Ph.D.

Professor of Oral Surgery, School of Dentistry; Adjunct Professor of Psychiatry, School of Medicine, University of Washington, Seattle, Washington

THOMAS P. FERENCE, Ph.D.

Associate Director of Executive Programs; Director, Masters Degree Program for Executives, Graduate School of Business, Columbia University, New York, New York

DONALD B. GIDDON, D.M.D., Ph.D.

Professor of Behavioral Sciences and Community Health, College of Dentistry; Professor of Anesthesiology, School of Medicine; Professor of Psychology in the Faculty of Arts and Sciences, New York University, New York, New York

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To

Mona, Adam, and Teddy
who are around all the time
S. F. D.

Ellie, who even typed it all
T. P. F.

My wife and children
D. B. G.

portunity to explore and practice a number of the basic psychological principles that will assist them in the delivery of dental care. The principles that will be discussed and experienced include psychological contracting, learning styles, motivation, perception, group and individual approaches to problem solving, conflict, communications and the helping relationship, and interpersonal influence and the change process.

Part three explores ways of applying the basic psychological principles discussed earlier to the actual dentist-patient interaction. In this part a number of specific concepts and management strategies are discussed. They include the process of behavior change; stress, anxiety, and fear; pain; maintenance of healthy behaviors; and life cycle changes.

This text is intended for students of dentistry, whether dentist or paraprofessional. Although primarily intended for use in dental schools, it is equally suitable for postdoctoral education, whether for graduate work or in continuing education.

We believe that the concepts discussed in this book are best understood if they are connected to dynamic processes of behavior that are experienced by the reader and then reflected on, preferably in small-group sessions. In Part two we encourage the reader to experience what is being read, for example, the resolution of conflicts that arise within the dentist over "problem patients," by incorporating suggested methods for structuring such experiences so they may allow for reflection and assimilation, probably best accomplished in a classroom setting. We believe these experiential opportunties make real for the dentist the underlying psychosocial dynamics of behavior that might often otherwise be acknowledged only intellectually. We also believe that it is important to take a stand—to present a text that integrates certain established principles of behavior with a pragmatic set of strategies for action. We have chosen as our theoretical point of departure an interpersonally oriented, psychosocial approach to behavioral analysis, borrowing heavily from Maslow, Sullivan, and McClellan, with a liberal sprinkling of learning theory. Our own teaching experiences confirm the usefulness of this approach.

Thus this text serves the dual purpose of providing an informational base about the psychological and social makeup of the patient, the dentist, and their interactions and of suggesting strategies that allow the reader, student, or graduate to experience and manage concrete human experiences relevant to a health professional. We hope to have at least touched on all the major issues, well recognizing that in many instances we have been too brief. Our readers can help us tremendously if they care to comment on the relative weight we have given to different issues or problems.

A serious attempt has been made to organize the contents of this text to prove suitable in instructional situations that differ in (1) course format (seminar, small-group sessions, lectures, etc.), (2) placement in the educational sequence (beginning, middle, or end of dental, postgraduate, or continuing education), and (3) length of course.

A suggested sequence for a brief lecture course might incorporate Part one, Chapters 1, 2, and 4 as background information; Part two, Chapters 8, 9, 11, and 13 as basic principles of psychological need formation, the nature of conflict, and its resolution; and Part three, Chapters 14, 15, 16, and 18 as examples (positive and negative) of dentist-patient interactions and their appropriate modification. A seminar or small-group discussion course format could include, in addition, Chapters 5, 6, 7, and 17, emphasizing the dentist's role as an active participant, or Chapters 5, 6, 7, 10, and 12, emphasizing the fundamental principles of interpersonal psychology.

As a convenient description of the dental health professional, we consistently use the term "*dentist*" in this book. The con-

PREFACE

Dentistry has matured through several eras. Early dentistry in this country was characterized by mechanics, technical procedures, and surgery to remove infected parts. Then came the recognition of a need for greater biological sophistication, a kind of belated awareness that since teeth and other oral structures are connected to the rest of the body's physiology, dentists should know the principles and facts of human biology and pathology. Now dentistry has grown ready to manage patients holistically, incorporating into diagnosis and treatment considerations of how the patient as a person responds to dentists and dental treatment.

Real and pragmatic ways are available to the practicing dentist for responding to a spectrum of patient needs reaching beyond technically well-executed restorations or surgical procedures. The dental profession has taken seriously the oft-quoted euphemism that it has the responsibility to treat people, not just teeth. Dentists have recognized that they must treat all kinds of people, even if they act or look strange or if they cannot see, hear, or walk. The era of the dentist as a practitioner largely for the able and the affluent is coming to an end.

The overall purpose of this book is to analyze how people become dental patients or dentists. The organization of this book is by concepts, with liberal use of case material. The concepts applied are those from the science of behavior that are relevant to the providing or receiving of dental health care.

The text is divided into three major parts. The first is informational, providing a backdrop for the following two. These last two parts provide principles and strategies for the dentist-patient interaction. We begin with the concept of a psychological contract and end with specific situations that typify dentist-patient interactions. Each part starts with an introductory section providing an overview of the topic. This is followed by individual chapters on the specific psychosocial dimensions involved.

Part one sets the stage for dental treatment. It provides the context in which dentistry occurs. As we shall discuss, a number of factors affect people's perception of dentistry before they ever become patients or dentists. Part one provides background information related to different psychosocial aspects of dentistry and includes the psychological significance of the face and mouth, psychological factors relating to a patient's need for dental care, the evidenced need for dental care, the utilization of dental care, and factors involved in becoming a dentist.

Part two provides the basic principles of interpersonal behavior. It is designed to give dental students or practitioners an op-

cepts are equally applicable for use by any dental health professional, dental student, general practitioner, specialist, hygienist, assistant, receptionist, or educator.

Finally, we note that more than one practicing dentist has observed that feelings of technical competence come relatively quickly. The challenges that emerge for dentists in their daily work, providing both rewards and frustrations, come undeniably from people—the patients who accept or reject treatment and who respond well or poorly; the decision to "do it over or not"; the staff that does or does not get along; and the ability or inability to deal confidently with other health professionals. We recognize that these challenges are lifelong cues and that their resolution comes slowly, if at all. It is our goal to accelerate this process of becoming a total health professional.

Sustained interest in the work-a-day world for dentists, to their credit, involves, perhaps to a greater extent than the public realizes, an intense commitment to respond to these challenges as dentists struggle to be increasingly effective health care providers. This book is dedicated to this commitment and to this struggle.

Each of us is deeply indebted to the many teachers, colleagues, students, and friends who have contributed directly or indirectly to this book.

Perhaps the only virtue of a book authored by three people is that the failure, by any one of us, to cite all those who helped can be attributed to the other two. However, Sam Dworkin wishes to acknowledge the unfailing encouragement of Dr. Bernard Kalinkowitz and the faculty of the New York University Programs in Clinical and Social Psychology, especially the late Dr. George Klein. Much of the opportunity to test ideas expressed in the book were effected by Dr. Irwin Mandel and Dr. Bernard Soloerberg of Columbia University.

Tom Ference expresses a special debt to James A. F. Stoner of Fordham University for 10 years of working together on many segments of his part of the book and to David Kaplan of Columbia University who got us started.

Don Giddon is indebted to James Dunning, Professor Emeritus, Harvard University, and to Paul Goldhaber, Dean of the Harvard School of Dental Medicine, for their confidence and encouragement of concepts exposed in this book and to the late Dr. Abraham Maslow, Brandeis University, who provided the wisdom and inspiration to pursue the dual profession of psychology and dentistry.

Collectively, we wish to thank individuals too numerous to mention at Columbia University, Harvard University, New York University, and the University of Washington for generously permitting us use of research facilities and materials and for offering perceptive comments while the book was in progress.

We also owe a collective debt of gratitude to Carol Bikofsky, Deborah Diserens, Barbara Freitas, Leah Soltar, June Mendelson, Joan Moritz, Sharry Pollock, Jane Moosbruker, and Elizabeth Adler for their contributions to the preparation of this book and for keeping us all together.

Judy Morton acted as our principal editor, and her ability and patience must be uniquely acknowledged. We are pleased to share with all these people the positive contributions this book may represent, although we take full responsibility for its inadequacies.

Samuel F. Dworkin
Thomas P. Ference
Donald B. Giddon

CONTENTS

Part one

SETTING THE STAGE

Facts and figures about patients and dentists

The stage is already set before two individuals ever meet as dentist and patient. In Part one questions that set the stage for the dentist-patient interaction will be considered.

OBJECTIVES

The objectives for the chapters in Part one are as follows:

- To introduce the concept of the psychological importance of the face and mouth to the species and to the individual
- To explore and examine the psychophysiology of dental disease
- To document the objective need for dental care, that is, the incidence of dental disease by type as it varies with such factors as age, sex, race, psychology, and environment
- To examine the perceived need for dental care and how it relates to the demand for and utilization of dental care
- To identify the factors involved in the evolution of the provider in terms of career choice, selection, and education of dentists

Chapter 1

THE PSYCHOLOGICAL SIGNIFICANCE OF THE FACE AND MOUTH

It is now an accepted fact of life that the biology and pathology leading to oral disease or dysfunction arise from the same general principles that govern the biology of the rest of the body. At the same time, specialized biological functions and unique pathologies develop in association only with the oral cavity, as is true in the gastrointestinal system or eye.

Just as oral structures and functions involve both general and specialized human *biological* processes, they also involve general as well as specialized *psychosocial* phenomena. The mouth is important to everyone; however, it is apparently more important to some persons than to others. Some will allow the oral structures to become important to them because appearance, eating, or pain avoidance is important to them; no inconvenience or expense will deter persons so motivated. For others, appearance, eating, and even pain avoidance are not sufficient motivators toward good oral health; the perception of the significance of the oral cavities for these people may be trivial, nonexistent, or even strongly negative. Despite the simple and obvious validity of these observations, it has taken a long time for health care delivery systems in general, and dentistry specifically, to begin attending to more than the purely physical aspects of disease or dysfunction.

It is now recognized that the treatment of illness, any illness, is never only the treatment of diseased body parts—painful stomach, carious tooth, or bleeding gums. Successful diagnosis and treatment require "identifying the patient in the disease" and "the physician in the treatment." How the body works and how patients respond to this is now understood to be much more complicated than previously thought. The understanding involves such far-flung concerns as the cultural-ethnic background of the patient, family attitudes toward disease and "doctors," and the person's own health belief system. In other words, the physician has to find out what the patient is complaining about in broader contexts than objective signs represented by measurable pathology. Perhaps the patient is afraid of being deformed, of being hurt, or even of dying. The physician has to evaluate his or her own willingness or ability to respond to the patient's concerns as well as to the patient's body.

Why is this so? Why can't the physician, dentist, nurse, hygienist, social worker, or pharmacist simply attend to "what's wrong"—the broken part, the fever, the heightened glucose level, the pain, etc.? Why become involved in a morass of personal problems that may only complicate or confuse the health professional who is trying to find out what the "real problem" is and then address it with dispatch?

The answer is simple in theory, yet complicated in application. The simple part of

the answer relates to our relatively new awareness that no disease process goes on in isolation from the rest of the patient's life—this is what is meant by "identifying the patient in the disease." A toothache is not simply a pure pain sensation; for the person involved the pain can have many meanings—dreaded treatment, disrupted appearance, and/or financial burdens. The complicated part of the answer relates to finding out which meaning is significant for a particular patient at a particular time and how the meaning attached to the disease symptom is likely to affect the patient's behavior before, during, and after treatment.

For example, a patient with a toothache must come to the dentist, sooner or later. However, the very act of deciding when to come is clearly a personal decision. The entire personal history of the patient as it affects the development of the present pain comes to bear. Why did the patient let it go so long? Was he or she influenced by family attitudes? Previous dental experience? Fear? Money? Who will the patient finally select as a dentist? Will the choice be the result of the recommendations of a neighbor? Walking in off the street? Will the patient choose someone in private practice? Someone in a dental school clinic? What kind of medication will the patient accept? Local anesthetic? Waking sedation? General anesthetic? What are the expectations of the patient? Exodontia only? Complex fixed-porcelain restorations? Endodontic therapy?

Not only patient-oriented but also dentist-oriented considerations are involved. Is the dentist available for emergencies? Does the dentist have personal preferences or biases for doing surgery as opposed to endodontics, etc.?

The patient's problem involves more than just objective pathology, and the dentist's response involves more than just clinical know-how. Thus health professionals find themselves attending to concerns (both patient and health professional oriented) that fall outside traditional clinical procedures. These concerns, taken together, have been labeled "psychosocial" factors in health and illness. For the patient, the term "psychosocial" refers to intra- and interpersonal forces that shape his or her development and maturation; such forces include consideration of the patient's social and cultural history and, most importantly, the patient's family relationships. A large portion of this book is devoted to demonstrating how the manner in which dental disease affects patients and the manner in which dentists provide care are both influenced by psychosocial factors. The mouth, oral structures, stomatognathic apparatus, etc. are known to have psychosocial as well as biological significance for persons. Although it seems more difficult to define with precision the psychosocial compared to the biological significance, the remainder of this chapter examines how the oral cavity becomes profoundly important to individuals.

OBJECTIVES

The objectives of this chapter are as follows:

1. To discuss the psychobiological basis of the significance of the orofacial area
2. To examine the different levels of psychobiological significance of the oral structures
3. To indicate the psychoanalytical interpretation of the importance of the oral cavity as an historical view

PSYCHOBIOLOGICAL BASIS OF THE SIGNIFICANCE OF THE OROFACIAL AREA

The basis of the importance of the face, mouth, and related structures can be traced biologically and psychologically. At the risk of being teleological, it may be said that the significance of the mouth and face may well result in part from the disproportionately large representation of the orofacial areas in the cerebral cortex. This is particularly so in the somatic sensory and motor systems, as shown in Fig. 1-1.

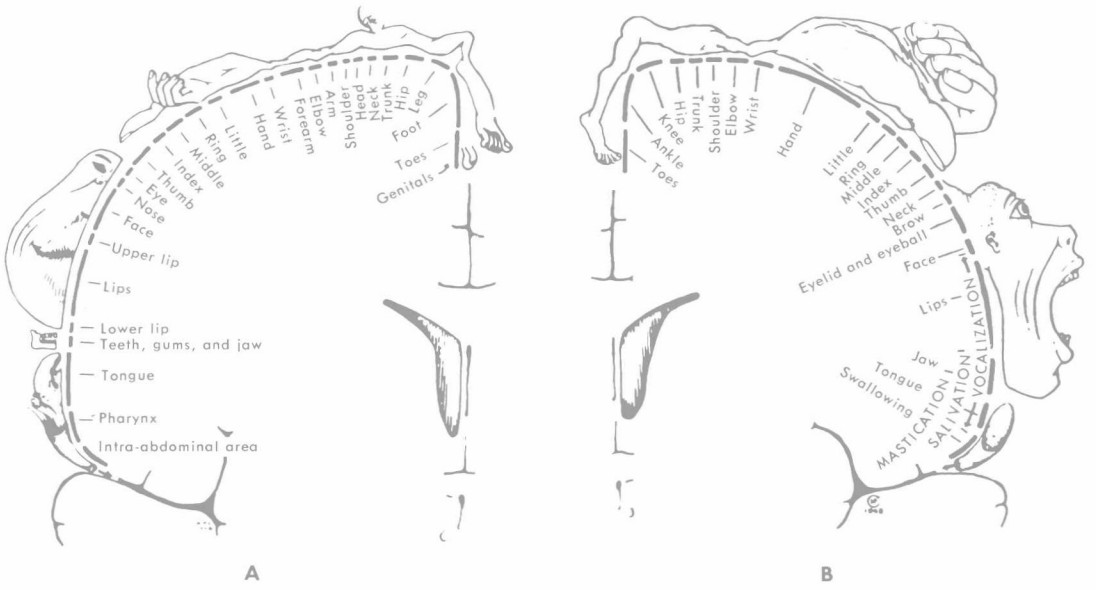

Fig. 1-1. A, Sensory homunculus, drawn overlying a coronal section through the postcentral gyrus. **B,** Motor homunculus, drawn overlying a coronal section through the precentral gyrus. (From Penfield, W., and Rasmussen, T.: The cerebral cortex of man: a clinical study of localization of function, New York, 1950, Macmillan, Inc. Copyright 1950 by Macmillan, Inc.)

Other observations support the idea that there is a biological substrate for the psychological significance of the oral cavity. For example, within the hypothalamic pathways of the limbic system, there is a region associated with oral and aggressive behavior. Stimulation in this area elicits penile erection and aggressive behavior as well as biting and chewing activity. Fighting is frequently a preliminary to both feeding and mating.[16] Moreover this close relationship between oral and genital functions is phylogenetically related to the olfactory sense, which, of course, has played an important role in feeding and mating for more primitive species.

DIFFERENT LEVELS OF PSYCHOBIOLOGICAL SIGNIFICANCE OF ORAL STRUCTURES

The psychological significance of the face and mouth may be conveniently thought of in terms of the three different levels of needs identified by Maslow[17]: survival, socialization, and self-actualization.

Maslow suggests that until basic survival needs are met, persons can devote little energy or time to socialization, except as relationships with others are important to satisfying these needs. For example, needs relating to socialization such as love or self-esteem or one's perceived worth in the eyes of others must be postponed until basic oral needs relating to survival such as thirst, hunger, and sex are met.

The highest level of needs in Maslow's[17] hierarchy, self-actualization, is defined as relating to the need to fulfill one's potential: ". . . to become everything one is capable of becoming." Thus the ". . . musician must make music, the artist must paint, . . . a poet must write. . . . " The key word here is "must" for the mature personality *must* become what it can, but only after lower-order needs have been met.

Let us examine how the mouth and its surrounding structures may take on significance for individuals at each of these need levels.

Survival

The survival functions of the mouth begin at birth. The mouth is important in the taking in of food and water from the mother or surrogate, thus obtaining adequate nutrition for the organism.

At the same time, the mouth is one of the neonate's most important avenues for learning about the world. The newborn infant's first experiences with objects, spatial relations, and the discontinuity of self from external objects occurs via the mouth as a sense organ. Probably the infant's first prototypical experiences of pain and frustration are associated with hunger and the feeding experience, thus establishing the survival value of pain as a warning signal of impending danger to the body.

The teeth, together with the facial muscles, provide a major means for expressing the positive emotions of joy or pleasure and the negative emotions of fear and anger. The infant, for example, experiences pain associated with teething. Simultaneously the satisfaction is associated with hunger reduction and the entire nursing-eating experience. These emotions are signals that provide the organism with the actual means for the defensive or aggressive behavior necessary for survival.

With the development of speech, communication becomes a more efficient way to deal with others than acting out the experience. This development facilitates the cooperative behavior necessary for survival. Depending on the particular culture, mouth odors emitted or detected communicate information about personal habits, behavior, ethnicity, and physical health.[12]

For the adolescent and the adult the face and mouth also have a role in the initiation and repetition of sexual activity, a necessity for the survival of the species. The appearance of the face and mouth is important in the attraction between the sexes as well as in the expression of emotion, which facilitates sexual attraction.

The mouth is also significant as a source of highly gratifying and reinforcing sexual behaviors from kissing to oral-genital activity, although these behaviors may, for some, become sources of guilt, shame, or other conflict. The pleasure they provide encourages the repetition of sexual acts, thus increasing opportunities for reproduction.

Some interesting studies suggest a basic need for oral activity per se. For example, there is a report on the probability of an apparently innate diurnal, oral behavior cycle in humans that can be linked with the rapid eye movement (REM) sleep cycle.[5] By noting spontaneous oral activity such as the amount of smoking, drinking, and eating occurring within a given time period, as shown for one subject in Fig. 1-2, rhythmic cycles of oral activity averaging 96 minutes were described in waking patients. Interestingly the peaks of oral activity appeared to be directly related to the degree of alertness. Although some of the cyclic responses were undoubtedly related to physiological variables such as glucose level, one may infer from the authors that these oral activities may be the waking counterpart of REM sleep—increasing in frequency as do gastric secretions, muscle contractions, and penile erections when REM sleep is deprived.

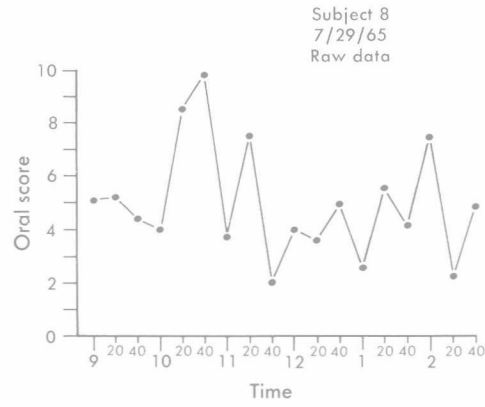

Fig. 1-2. Raw data of subject who showed "very noisy" cycles. The times listed in all the graphs refer to the 20-minute intervals beginning with the stated times. (From Friedman, S., and Fisher, C.: J. Am. Psychoanal. Assoc. **15**[2]:317, 1967.)

Socialization

The importance of the face and mouth in the socialization process begins with their role in perceptual development as the maturing infant differentiates "self" from others. As observed by Piaget, "the oral cavity with its tool tongue becomes the first organ of perception for the infant."[19] The child learns that although it can sense objects, that is, its own hand or foot or even the mother's breast, these sensed objects have an independent existence. By confrontation, then, with his or her own oral cavity, the child learns to perceive the different body parts as well as his or her separation from the rest of a world of external objects.[23]

Following differentiation of the world into self and others, the young child begins to recognize the importance of cooperative interaction with other individuals to attain goals and objectives. With the maturation of the facial muscles and the development of the organs involved in speech, the human organism is able to communicate using words and facial expressions. In contrast to lower animals, humans are able to effectively use these orally initiated symbols to express ideas. For example, we can orally express aggression, rather than being required to act it out by biting or attacking.

By virtue of its role as an organ of aggression, the mouth becomes not only a logical channel but also a susceptible target for symbolic expression. Harmful, nonmasticatory activities, often obviously aggressive in intent such as "gnashing the teeth in anger," are seen in bruxism (the clenching or gnashing of the teeth), with deleterious effects on the teeth, the temporomandibular joint, and related structures.

In addition to the previously mentioned nonmasticatory activities that are affected by social factors, the act of mastication is also influenced by the psychosocial context of eating behavior. In a study by Giddon et al.[7] comparing the ability of denture wearers and persons with natural dentition to differentiate the sweetness of solid food, it was found that the denture wearer took more than twice as long to render a judgment than a person with natural dentition: 15 seconds and 6 seconds, respectively. Using a psychophysical method to determine the differential threshold, as shown in Fig. 1-3, it can be seen that the discriminative ability of denture wearers was only half that of the patients with natural dentition. When the denture patient was restricted to 10 seconds, the maximum time that the natural dentition patient took to render a more accurate judgment, the discriminative ability as represented by the slope became zero, that is, the artificial denture patient was absolutely unable to distinguish among the cookies containing increasing levels of sucrose.

Generalizing to the situation in which eating behavior usually occurs, it is probable that the denture wearer can be placed in socially stressful situations. Like anyone else, the denture wearer does not like to look any more different than necessary; he or she will probably attempt to chew food at a rate faster than usual for denture wearers, thereby reducing the ability to perceive and enjoy the subtle differences in the flavor of solid foods. Some denture patients will also undoubtedly resent the inadequacies of dentistry to meet an important psychosocial need.

Part of the denture wearer's handicap results from the loss of adaptability and compensatory ability. Patients with natural dentition who are restrained by time or number of masticatory strokes compensate by increasing the forcefulness of each chewing stroke.[20] Unfortunately the denture wearer is at a decided disadvantage and does not even approach the chewing efficiency of the individual with natural teeth.[27] As noted earlier, the texture of the food and the associated sound will also be different and probably less satisfactory for the denture wearer. In addition to the satisfaction resulting from sound quality, the swallowing threshold is influenced by texture and feedback from the auditory system. Recall, for example, the changing