

# Management of Functional Gastrointestinal Disorders in Children

Biopsychosocial Concepts  
for Clinical Practice

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ISBN 978-1-4939-1088-5                      ISBN 978-1-4939-1089-2 (eBook)  
DOI 10.1007/978-1-4939-1089-2  
Springer New York Heidelberg Dordrecht London

Library of Congress Control Number: 2014941692

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Printed on acid-free paper

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*This book is dedicated to Giulio J. Barbero (1923–1997), mentor, friend, and colleague whose caring, energy, ability, love of learning, and creative leadership fostered the well-being of patients, trainees, and colleagues throughout his professional life. Dr. Barbero was one of the founders of the subspecialty of pediatric gastroenterology, a significant contributor to research in cystic fibrosis, a founding member of the national and international cystic fibrosis foundations, a pioneer, along with Dr. Eleanor Shaheen, in the description and clinical management of failure-to-thrive, an advocate for the care of children in developing countries, and a tireless chairman of the Department of Child Health at the University of Missouri School of Medicine from 1972 to 1989.*



# Preface

## The Origins and Purpose of This Book

I began my fellowship in 1966 as a 31-year-old board-certified pediatrician eager to learn the subspecialty of pediatric gastroenterology. The model of clinical practice that I knew was the standard biomedical model, whose clear-cut goals were the diagnosis and cure of organic diseases. I was unaware of any other model and believed that psychological or social problems were separable parts of illnesses that could and should be handled only by mental health professionals. My job was to cure diseases.

I shall never forget an early experience I had during ward rounds with Dr. Giulio Barbero, my mentor at Children's Hospital of Philadelphia. A 9-year-old patient with complaints of abdominal pain that prevented his going to school had been referred to Dr. Barbero after failure of many diagnostic evaluations and therapeutic trials. I remember my alarm when I asked Dr. Barbero what we would do if we, too, could not find a disease or cure for the child's pain. How could we honestly offer to help him? I was afraid that my mentor was trying to teach me how to be a charlatan and that he falsely implied to the parents that, if they allowed him to hospitalize their child, some good could come of it. How could any good come of it? The parents staunchly believed that their child was afflicted with an organic disease that no previous physician was smart enough to diagnose. I feared we could do no better.

Much good resulted from this hospitalization, although I could not grasp it at first. Dr. Barbero used the biopsychosocial model of clinical practice, years before the term was coined [1], which included individual diagnostic interviews with each parent and measures aimed at bringing to light and limiting secondary gain. Very dramatic healing took place. Not only was the iatrogenic anxiety caused by previous "wantonness of inquiry" [2] relieved, but also the connection between the mother's emotional difficulties and what was driving the child's dramatic complaints, namely, the child's unrecognized anxiety, was brought to light. And it was accomplished in a way that strengthened rather than weakened our rapport and enabled them bring an end to their child's abnormal illness behavior.

It took me about 6 months to be fully won over and become an advocate of the bio psychosocial model—a difficult adjustment for me. I had not felt comfortable delving into patients' intimate experiences and feelings. Taking a conventional history had been what I was used to; it was less open-ended, more focused on finding a disease, and less time-consuming. History taking in the biopsychosocial mode turned out to resemble what another pioneer in biopsychosocial pediatrics, Dr. Morris Green, called “the diagnostic interview” [3]. Some time passed before I allowed myself to drift into existential reality and to have feelings for patients beyond “professional detachment” and “scientific objectivity” [4]. The biopsychosocial model fostered *engagement*, the antithesis of *abstraction*, which, in the words of Edmund Murphy, “may be too easily used as an evasion of commitment and responsibility” [5]. And it opened vistas for learning that enhanced my understanding of illness. My willingness to adopt this model of practice was inspired by Dr. Barbero's teaching-by-example and sustained by an interest in, and aptitude for, the psychological aspects of patients and their illnesses acquired during a formal psychoanalysis that I underwent as a young adult.

A large body of literature exists on functional GI disorders in children [6, 7]. Functional syndromes have been well described insofar as their symptoms, epidemiology, and, in some cases, their physiology. Although these disorders are common and cause distress in families, management techniques have generally not been the major focus of investigation. This neglect may be attributed in part to the relative paucity of symptom-ameliorating medications that “fix” such problems. Of greater moment is the dominant biomedical model of practice that is best suited to address “real” organic diseases and does not foster enthusiasm for functional disorders. However, a satisfactory clinical outcome often depends on the clinician's ability to discern not only the biological factors in illness but also the unique cognitive and emotional needs that patients bring to the task of healing.

A colleague once asked me whether I considered myself a clinical investigator. I said no, I didn't do drug trials or statistical surveys of cohorts of patients I did not personally know. Rather, I aspired to be a “clinical naturalist,” guided by (what one parent called) an attitude of “concerned inquisitiveness,” combining sincere caring for patients with naturalistic observation and collection of data that, in time, might yield relatively new and useful information. There were two practical elements to this process: “the workbook” and “the card file.”

*The workbook:* During my fellowship, Dr. Barbero required his fellows to take histories using a workbook of a dozen or more pages. The first two pages were blank for the writing of the Chief Complaint and the History of the Present Illness. The remaining pages contained questions regarding the past and family histories as well as developmental aspects of the patient, the parents, their life experiences, and current concerns.

I dispensed with the workbook as soon as I finished training because, in everyday practice, its many seemingly unimportant questions took up so much time. I quickly discovered that not asking the “unimportant questions” resulted in a shorter encounter, but one that left me without really having a grasp of what was actually bothering the patient and, therefore, not having anything to offer much beyond what the referring doctor had told them. So, I reconstructed a workbook and decided to take

the time to ask the “unimportant,” open-ended questions and listen to where patients’ answers led. More often than not, clues that emerged during this somewhat time-consuming process were well worth the time spent.

*The card file:* As a child, I had the benefit of a mother who was not only loving but also had a reverence for Nature. Whether it was in the bedtime stories she read to us or the interest she showed during walks in the park, she made descriptive observations and their correlative meanings important to us.

When I entered practice in 1970, I was inclined to look upon the clinical realities I encountered as phenomena of Nature—encounters that could be learned from, provided I made the effort to record and collect them as data. Therefore, I developed a card file (computers were not affordable back then). Each time I dictated a report on a new patient, I asked my secretary to put a punch card into one or more of its 50 or 60 diagnostic slots. In time, the card file enabled me to retrieve and analyze whole categories of patients’ charts. That process of collection and analysis was the basis for, e.g., the publication in 1993 of a review of 71 children with Cyclic Vomiting Syndrome [8], and for the previously unpublished data cited in the chapters of this book.

The chapters that follow are drawn from my personal experience as a hands-on, full-time clinical practitioner of pediatric gastroenterology for over 44 years. They describe, in an admittedly idiosyncratic way, the details of my practice using the biopsychosocial paradigm, including naturalistic descriptions of functional gastrointestinal disorders, clinical goals, and the theoretical bases for management techniques. They are an attempt to share what I’ve learned with colleagues who work with children and families.

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## References

1. Engel GL. The need for a new medical model: a challenge for biomedicine. *Science*. 1977; 196:129–36.
2. Apley J. *The child with abdominal pains*. 2nd ed. Oxford: Blackwell Scientific Publications; 1975. p. 104.
3. Green M, Interviewing. In: Green M, Haggerty RJ, editors. *Ambulatory pediatrics II*. Philadelphia, PA: WB Saunders; 1977. Chapter 53.
4. Halpern J. From detached concern to empathy—humanizing medical practice. New York, NY: Oxford University Press; 2001.
5. Murphy EA. *The logic of medicine*. Baltimore: Johns Hopkins University Press; 1976. p. 3.
6. Milla PJ, Hyman PE, Benninga MA, Davidson G, Fleisher DR, Taminiou J. Childhood functional gastrointestinal disorders: neonate/toddler. In: Drossman DA, editor in chief. *The functional gastrointestinal disorders—ROME III*. McLean, VA: Degnon Assoc, Inc.; 2006. p. 687–722.
7. DiLorenzo C, Rasquin A, Forbes D, Guiraldes E, Hyams JS, Staiano A, Walker LS. Childhood functional gastrointestinal disorders: child/adolescent. In: Drossman DA, editor in chief. *The functional gastrointestinal disorders—ROME III*. McLean, VA: Degnon Assoc, Inc.; 2006. p. 723–78.
8. Fleisher D, Matar M. The cyclic vomiting syndrome—a report of 71 cases and literature review. *J Pediatr Gastroenterol Nutr*. 1993;17:361–9.



# Acknowledgments

- For encouragement and assistance in my development as a clinician and human being: Arthur M. Meisel, MD, Peter B. Gruenberg, MD, and my late wife, Jane Fleisher, RNC
- For impetus toward learning the biopsychosocial model of practice: Dr. Allyn Zanger, Lillian Weitzner, MSW, and Dr. Stanley Mandell.
- For collaboration in pioneering the recognition and management concepts for Cyclic Vomiting Syndrome in children: Kathleen Adams, BSN, B Li, MD; and in adults: Kevin Olden, MD and Mr. Timothy Hulse.
- For moral support and encouragement during the years it took for this work to evolve: William Leider, MD and Emily Leider.
- For assistance in understanding psychological aspects of perplexing patients: Michael L Fleisher, MD.
- For the many hours spent improving the quality of my writing: my dear friend and neighbor, Professor Albert Devlin.
- For facilitation of my role as teacher and writer: Leonard M. Linde, MD, Marshall Haith, PhD, and Paul E. Hyman, MD.
- For the capacity for caring and reverence for Nature: my mother, Rose Fleisher.
- For recognition of the importance of integrity and creativity: my father, Harry Fleisher and my uncle, Leon Lack, PhD.
- For their unstinting work in the production of this book: Paula Partridge and Stacey Turpin.
- For the friendship, edification and constructive criticism enjoyed during a more than 30 year friendship with an extraordinary gastroenterologist: Edward J. Feldman, MD.
- And for the indispensable support without which this work could not have been accomplished: my beloved wife, Carol Watson Fleisher.



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# Chapter 1

## Introduction

### Chapter Outline

#### A. *Some essential concepts*

1. Caring and rapport
2. The concept of functionality
3. Who is the pediatric patient?

#### B. *Integration of biomedical and psychosocial management*

1. Basic values of clinical practice
2. Disease, illness, and the role of the physician
3. The doctor–patient relationship: three models and their uses
4. Assessing pain behavior
5. The effects of a child’s illness on parenting
6. The form and content of consultations
7. The constituents of illness: a guide to diagnosis and management
8. Why somatizing patients may be difficult to manage
9. The gap between pediatrics and psychiatry

#### C. *Relevant attitudes, skills, goals, and responsibilities*

#### D. *Dealing with the emotional strain*

## Caring and Rapport

A doctor’s caring attitude fosters rapport and trust which, together with the clinician’s skill in listening and communicating, makes the doctor–patient encounter powerful as a diagnostic and therapeutic agency [1, 2]. When a patient senses that the physician genuinely cares, disclosure is more open, allowing the clinician a fuller appreciation of the patient’s difficulty and discovery of previously unapparent therapeutic opportunities. When a patient senses that the physician cares, advice and

prescriptions are received more willingly because the patient is more likely to feel that the management offered has been carefully considered and individualized.

I have asked groups of medical students and residents what they thought the characteristics of a good doctor were, based on their own experiences as patients and caregivers. Their answers included important attributes such as willingness to work hard, conscientiousness, attention to details, evidence-based practice, cleanliness, consideration of the patient as a human being, etc. No one mentioned “caring.” That characteristic did not come to mind or perhaps, “its existence goes without saying.”

Because caring is so important in managing illness and because this is a book about managing illness, the phenomenon of caring is worthy of some discussion.

## *Definition*

*Caring* is different from *caregiving*. Caregiving is a cognitive process having to do with the technical aspects of medical practice conceived as applied biology. It is what is talked about on rounds, in conferences, and during continuing medical education. Its procedures are codified numerically for billing purposes.

By contrast, caring is an emotional process having more to do with the psychology of what motivates us to do clinical work [3].

What makes us worry about our patients, get up out of bed for patients, and do things for patients for which we may never get paid or thanked? Of course, there are professional imperatives and medical–legal obligations that compel our response to a call for help. We answer the call even at moments we may not feel very caring or may even feel resentful. Nevertheless, given the ability to earn a comfortable living, the two most important incentives for clinicians to work are the inner-satisfaction of knowing that one has genuinely improved another’s well-being and their expressions of gratitude [4, 5].

Caring for a patient is a bit like loving someone. In both cases, whether it is the person we love or the patient we care for, the well-being of the other person is felt to be *overridingly important*. It is that feeling of overriding importance that indicates genuine caring. Physicians’ “bedside manners” are empty exertions in the absence of genuine caring.

What are the origins of caring? One theory proposes that the ability to care about others is derived from the emotional attachment that normally develops between mother and child [6]. Attachment is an active, intense, enduring emotional relationship that is specific to two people [7]. It develops as the result of two processes: (1) dyadic interaction, i.e., the special, mutually regulatory interaction between mother and infant; (2) the repeated linkage of pleasure and relief of distress within the dyadic relationship that is protective and nurturing. If we have been fortunate enough to have experienced the incomparable satisfaction of being loved and cared for, and have experienced the anxiety of being separated from that source of happiness, then we are unforgettably impressed with the goodness of being cared about. So when we encounter another person whose well-being is threatened, and we empathetically sense that person’s distress and, at the same time, know we have the ability to relieve it, then we are instinctively motivated to go to that person’s aid.

Therefore, how much or how little we are able care for another—how well or poorly we relate to others in later life—is strongly influenced by the success or failure of our primary attachment relationships in early childhood. John Bowlby [8] found that attitudes about one’s worthiness to receive care and the trustworthiness of others who might provide care are derived from one’s experience with care received during childhood. It has been shown, with respect to the management of diabetes, that the efficacy of clinical care is related to the attachment styles of the physician and patient who engage in the clinical relationship [9, 10].

The best control, as indicated by glycosylated hemoglobin levels, was achieved when both clinician and patient had secure attachment styles.

A characteristic of caring clinicians is their inclination to not give up when confronted with a diagnostic or management problem that seems insoluble. By contrast, a less caring clinician may be inclined to dismiss problems for which they have no ready solutions. Doing so, however, is a disservice to the patient and to oneself. The least we can do for a patient whose illness seems hopeless is to not desert her, but to stand by her as we continue to search for insight and discovery of what might help.

The disservice to oneself is the missed opportunity for the kind of experience that creates clinical acumen. Acumen develops during the course of practice by “sticking, not quitting” so that, as time passes, the clinician becomes adversity-scarred, but more learned and skillful in struggling against illnesses that frustrate less experienced colleagues. The quality of one’s experience depends upon the degree of caring that the physician applies to the patient. Caring energizes and focuses the clinician’s drive to heal and learn. Non-caring weakens the clinical effort (and may contribute to physician “burn-out”).

## The Concept of Functionality

The following case vignette is a fictional compilation of typical historical features presented by parents of children with refractory abdominal pain complaints and prolonged school absence. It demonstrates the usefulness of **the concept of functionality** in somatizing children and their parents. Children who somatize focus on bodily complaints to unconsciously avoid recognition of anxiety, and gain relief by securing the comforting presence of mother and the mothering environment. It exemplifies how recognition of functionality can help in clinical management.

A bright 9-year-old girl was brought for evaluation for recurrent abdominal pain that had caused her to miss 3 weeks of school. Her symptoms became disabling sometime after the onset of her mother’s symptoms of anxious depression, for which treatment was not sought. The child also developed worries about her parents’ safety when they traveled. She began to insist on sleeping on the couch near her parents’ bedroom rather than in her own room. At the time of the consultation, the mother stated that she was sure there was an organic cause for her daughter’s abdominal pain. Moreover, she was certain that the pains were severe because the child’s stoic behavior in the past, after an accidental fracture of her forearm, meant that she had a high pain threshold (“...so when she actually