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Report from IFFGD Research Award Winner: Functional Gastrointestinal Disorders – Biopsychosocial Perspectives on Assessment and Treatment

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Dr. Danda is the recipient of the **IFFGD 2003 Research Award to Pediatric Investigator, Clinical Science**. She is completing her training in child and pediatric psychology as a Postdoctoral Fellow at the University of Kansas Medical Center in the Department of Pediatrics, Divisions of Pediatric Gastroenterology and Behavioral Pediatrics. She received her Bachelor's degree in Psychology and French from the University of Missouri-Columbia in 1993 and attended graduate school at the University of Florida Health Sciences Center in the Department of Clinical and Health Psychology, where she specialized in pediatric psychology, participated in numerous independent and collaborative research projects, and had several publications. She continued training as an intern at Children's Mercy Hospital before joining the University of Kansas Medical Center.

As many as 10–20% of school-age children experience bellyaches severe enough to affect activities. Not all of these children seek medical treatment or experience chronic, continuous abdominal pain. A subset of children present to their clinician with symptoms sufficient to meet criteria for a functional gastrointestinal disorder (e.g., functional dyspepsia, irritable bowel syndrome). Past research on childhood abdominal pain used a broad description – *recurrent abdominal pain (RAP)*. Rome II criteria, however, classifies abdominal pain into subsets based on symptom presentation. My research focuses on examining the psychosocial contributions to these functional gastrointestinal disorders and determining whether there are different psychosocial factors (e.g., emotional or behavioral symptoms, developmental stressors, family communication patterns) associated with the specific functional gastrointestinal disorders.

I am particularly interested in identifying factors that predispose children and adolescents with functional gastrointestinal disorders to experience disability and identifying psychosocial factors that affect treatment outcome. I am collaborating on a research project collecting data to provide a description of the developmental, psychosocial, and social factors influencing children with functional abdominal pain disorders and compare medical (e.g., drugs such as imipramine, montelukast, ranitidine, and erythromycin) and psychological (e.g., cognitive behavioral therapy) treatment for functional dyspepsia. In addition to comparing treatment modalities, we hope to identify factors associated with treatment outcome. Essentially, we want to find out which treatments work for which patients. Treatment of functional gastrointestinal disorders does not appear to be “one size fits all.”

Another core issue related to functional gastrointestinal disorders is disability. Some children experience interruption in their daily activities due to abdominal pain, whereas others do not. Which children experience disability related to a functional gastrointestinal disorder and what factors predispose them to experience disability?

Pain Associated Disability Syndrome (PADS) is a term used to describe patients who experience a downward spiral of disability (i.e., school absence, withdrawal from friends, restriction of daily activities) and pain for which acute pain management strategies have failed. A retrospective analysis [examination of known outcomes using existing records] indicated that almost all patients with PADS had a functional gastrointestinal disorder as well as physical and emotional stressors that sustained pain

and arousal. Pain and disability are exacerbated or maintained via medical, psychosocial, and developmental factors. For example, pain experiences can lead to an increased sensitivity to potentially painful stimuli (visceral hyperalgesia). Undergoing multiple medical tests without explanation can lead to heightened anxiety and arousal. Developmental challenges, such as transitions to a new school, disruptions in a peer group, and puberty, can lead to heightened states of stress. Heightened states of stress and arousal, in turn, can exacerbate pain sensation and focus.

In collaboration with other team members here at the University of Kansas, I plan to systematically and prospectively define the characteristics of patients with PADS, examine the effects of multidisciplinary treatment, and identify factors associated with treatment outcome. One area I plan to explore is the contribution of anxiety related to somatic symptoms and generalized anxiety or depression. Parents and children's negative or worrisome thoughts about medical problems are likely to play a large role in the development of PADS. For example, many children with a functional gastrointestinal disorder undergo multiple medical tests that result in negative results, which then increase anxiety, either in the patient and/or the parents. In addition, an anxiety or depressive disorder may lead to a predisposition to experience somatic symptoms, such as abdominal pain. Family dynamics and communication, especially during adolescent years, can also play a role in exacerbating and maintaining pain and disability. Research on PADS patients will ultimately help provide information to diagnose and treat these youths more effectively.

Lastly, I am involved in several projects pertaining to *Functional Fecal Retention (FFR)*, a common diagnosis associated with constipation that is characterized by at least 12 weeks of passage of large diameter stools at intervals less than two times a week; and retentive posturing (i.e., avoiding defecation by purposefully contracting the pelvic floor). Presumably, children with constipation experience pain with defecation of large, hard stools and develop a fear of defecation. Toilet learning is either failed or interrupted, and children appear unwilling or unable to relax the pelvic floor, creating an obstruction to defecation. At the University of Kansas, we are examining whether fear actually

increases anal sphincter pressure and whether imagery and relaxation reduce fear and anal sphincter pressure. Children are randomized to either no treatment or treatment involving learning relaxation and imagery. Physiological and visual analog readings of anxiety are taken before, during, and after colonic manometry catheter removal.

Another study involves piloting a developmentally friendly, educational, non-invasive treatment of FFR. FFR may often go unrecognized at first, and children may be subjected to invasive and painful procedures, including enemas and repeated rectal exams, that could increase fear of defecation. The new approach to treatment includes education for the child and family about FFR, stool disimpaction with MiraLax, and assurance of painless defecation, as well as brief behavioral recommendations about differential attention to toileting behaviors (i.e., praising appropriate toileting and other positive behaviors while minimizing attention to problematic behaviors). Goals of the study include determining the effect of this first, primarily educational visit on symptom resolution and identifying medical and psychosocial factors associated with treatment success and failure. Children with encopresis, or fecal soiling, tend to have more behavioral and social problems than other children, although not necessarily at clinical levels. The question remains, however, what role does oppositional behavior, attention problems, anxiety, or depressive symptoms play in children with persistent FFR? If children have coexisting psychological problems, does treatment of these disorders lead to improvements in FFR?

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