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Pain severity and pain catastrophizing predict functional disability in youth with inflammatory bowel disease☆

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Abstract

Background: Abdominal pain is commonly reported by youth with IBD. In a significant subset of youth, pain severity and pain catastrophizing (i.e., unhelpful thoughts related to the pain) may contribute to more negative outcomes and greater impairment in functioning. This study aimed to examine relationships of pain severity and pain catastrophizing with functional disability among a sample of youth with inflammatory bowel disease (IBD).
Methods: Seventy-five youth aged 11 to 18 years completed ratings of abdominal pain severity, pain catastrophizing, and functional disability using validated measures. Disease activity was rated by treating physicians.
Results: Over half of participants reported abdominal pain in the past two weeks, and pain was present among those with and without clinical disease activity. Nearly one-third of youth reported mild to moderate functional disability. After controlling for gender, pain severity accounted for 15% of the variance in patient functional disability. Moreover, pain catastrophizing contributed significant variance to the prediction of functional disability (approximately 7%) beyond the role of pain severity.

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Conclusions: Greater attention to the role of pain catastrophizing in contributing to functional disability in youth with IBD may be important given that pain-related cognitions are modifiable via intervention.

1. Introduction

Abdominal pain is common among youth with inflammatory bowel disease (IBD). It may result from gastrointestinal tract inflammation due to disease activity, IBD-related procedures or surgical interventions, treatment side effects, or intestinal obstruction.[1] Among youth with IBD participating in one recent study, over half reported abdominal pain, and of those reporting pain, the majority had no evidence of clinical disease activity.[2] Functional abdominal pain (FAP) refers to recurrent pain resulting from visceral hypersensitivity or overactive nerves in the GI tract in the absence of any identifiable organic disease.[3] In a study of 307 youth with Crohn's disease (CD), 13% of those endorsing abdominal pain met criteria for FAP, providing evidence that FAP is a comorbid condition in a subset of youth with CD.[4]

Regardless of whether or not an underlying organic explanation can be identified, abdominal pain adversely impacts physical functioning and health related quality of life (HRQoL) in affected youth.[5,2,6] Several aspects of the abdominal pain experience may influence functioning including pain severity, pain duration, and one's thoughts related to the pain experience. For example, regarding the duration of abdominal pain, youth with IBD who reported the presence of abdominal pain at two time points over a six-month period had significantly lower HRQoL than those reporting no abdominal pain at either time point. Moreover, the youth with IBD reporting abdominal pain at both time points were more likely to have clinical impairments in their HRQoL compared to either youth reporting abdominal pain at just one time point or youth without abdominal pain at either time point.[2]

In addition to the role of abdominal pain severity and duration, thoughts related to the abdominal pain experience have also been associated with functional disability. Pain catastrophizing refers to a tendency to magnify or exaggerate the threat value or seriousness of pain sensations.[7] In youth, catastrophizing can be thought of as extreme worry about the pain.[8] Greater pain catastrophizing has been consistently associated with greater physical and psychosocial disability among patients with various pain conditions.[9–14] However, the role of pain catastrophizing in predicting functional disability has yet to be explored in a pediatric IBD population.

Studying the role of the abdominal pain experience, including pain severity and pain catastrophizing, is important because a significant subset of youth with chronic pain experience a downward spiral of increasing functional disability, such as lack of participation in age appropriate activities (e.g., sports, social events), poor school attendance, and limited interaction with peers.[15] For youth with IBD, examining relationships of both abdominal pain severity and catastrophizing with functional disability are important for several reasons. First, abdominal pain is an inherent part of IBD, and as such, youth with IBD are expected to experience at least intermittent abdominal pain throughout their lives. Moreover, because "curing" all episodes of abdominal pain is not a realistic goal in the context of IBD, identification of modifiable factors that may reduce the negative impact of abdominal pain on daily functioning is important. Cognitions related to abdominal pain have the potential to be modified and consequently, documenting their associations with functional disability is of value in maximizing adjustment in the context of pediatric IBD.[16–18] Thus, the current study explored the role of both pain severity and pain catastrophizing in relation to functional disability within a pediatric IBD sample. Specifically, this study aimed to: (1) describe rates of abdominal pain and functional disability among youth with IBD; and (2) to examine the role of both pain severity and pain catastrophizing in accounting for significant variance in functional disability. It was hypothesized that abdominal pain would be prevalent in this sample. Additionally, we expected that both pain severity and pain catastrophizing would be positively associated with functional disability in regression models, given findings supporting such associations within the pediatric chronic pain literature.

2. Materials & method

2.1. Study design

This study utilized baseline data from an adherence-promotion randomized clinical trial (RCT). Seventy-five participants were recruited from two Midwestern children's hospitals. Patients meeting inclusion criteria were approached during scheduled outpatient gastroenterology clinic appointments by a research assistant. Interested families provided informed consent/assent and then completed a home assessment visit. During this visit, at least one parent/guardian completed a measure of demographic information. Youth completed measures of abdominal pain, pain catastrophizing, and functional disability. Medical records were reviewed for disease information.

Inclusion criteria were: (a) medically confirmed IBD diagnosis; (b) prescribed daily oral IBD maintenance medication; (c) age 11 to 18; and (d) at least one parent or guardian willing to participate. Inclusion criteria (b) and (c) related to the aims of the parent study which were to examine efficacy of an intervention to improve oral medication adherence among adolescents. Exclusion criteria were: (a) patient cognitive impairment that would preclude questionnaire completion; and (b) no English fluency.

2.2. Measures

2.2.1. Demographic information

Parents provided the following demographic information at baseline: youth age, gender, race/ethnicity, and family annual income.

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