Symptom Clusters That Included Gastrointestinal Symptoms Among Children Receiving Cancer Treatments: A Scoping Review

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PROBLEM IDENTIFICATION: Composition and measurement of the gastrointestinal (GI) symptom cluster (SC) has been inconsistent; therefore, a gap exists in understanding of the GI SC. The purpose of this study was to synthesize findings from prior studies to better understand the GI SC and accompanying non-GI symptoms in children receiving cancer treatment.

LITERATURE SEARCH: PubMed®, Embase®, CINAHL®, Scopus®, and PsycINFO® databases were searched through February 2022. Of 661 articles identified, 8 met inclusion criteria.

DATA EVALUATION: A standardized investigator-developed form was used to extract data from eligible studies, including study and sample characteristics, analytic procedure, SCs that included GI symptoms, and influencing factors.

SYNTHESIS: The 12 most frequently reported GI and accompanying non-GI symptoms were identified across 20 SCs. Phi correlation coefficients were calculated as indicators of strength of association between each pair of co-occurring symptoms within an SC.

IMPLICATIONS FOR RESEARCH: Future studies should develop and test tools to comprehensively assess GI and accompanying non-GI symptoms and interventions that target shared underlying mechanisms.

KEYWORDS child; pediatric; cancer; chemotherapy; symptom; gastrointestinal tract

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Children diagnosed with cancer experience symptoms that result from their cancer and its treatment (Leahy et al., 2018). In addition, children commonly experience multiple linked symptoms simultaneously—that is, symptom clusters (referred to hereafter as "clusters") (Collins et al., 2000; Dodd et al., 2001). Findings of prior studies indicate that children reported between 1.7 and 12.7 symptoms during the active treatment phase of their illness (Baggott et al., 2011; Huijer et al., 2013; Kamkhoad et al., 2019). Synergies between co-occurring symptoms can increase children's symptom burden by generating additional symptoms (e.g., pain and disturbed sleep causing fatigue) (Hockenberry & Hooke, 2007).

Various approaches have been used to identify clusters among children with cancer including a priori (focused assessment of specific symptoms known to be prevalent in a particular clinical population) or de novo (assessment of a broader range of symptoms to identify clusters) approaches (Miaskowski, 2016). Most studies used the de novo approach to assess symptoms and applied statistical techniques (Atay et al., 2012; Baggott et al., 2012; Yeh et al., 2008) to identify clusters. The number of resulting clusters in prior studies has ranged from 1 to 10, with inconsistent labeling across studies of clusters comprised of similar symptoms (Baggott et al., 2012; Williams et al., 2012; Yeh et al., 2008). For example, the mood disturbance cluster consists of difficulty concentrating, feeling nervous, feeling sad, worrying, and feeling irritable (Baggott et al., 2012), and the fatigue, sleep disturbance, and depression cluster includes difficulty concentrating, difficulty sleeping, fatigue,