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An exploratory study of aspects related to current inpatient and nurse-led clinic management of idiopathic childhood constipation



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Summary

Objective: To estimate cost, health education provision, multidisciplinary collaboration, and potential parent/carer interest in nurse-led clinics, and present and discuss the evidence related to both current inpatient and nurse-led clinic management of idiopathic childhood constipation.

Design: A two-phase exploratory study is described, consisting of a retrospective audit of medical notes and a small-scale prospective survey.

Survey setting and participants: The study was carried out in a general medical and surgical paediatric ward of a metropolitan hospital in Western Australia. Participants consisted of otherwise healthy children aged between one and 16 years old, hospitalised for disimpaction of idiopathic childhood constipation using Polyethylene Glycol plus Electrolytes.

Main outcome measures: Cost, health education provision and multidisciplinary collaboration of hospitals compared with nurse-led clinics.

Results: Phase 1 identified 103 children, who required 597 admission days, costing a minimum of AU\$611,925. Health education was provided in 47 cases and, excluding general practitioners, multidisciplinary collaboration occurred in two cases on discharge. Phase 2 surveyed 14 parents/carers, of whom eight reported a mean weekly cost for laxatives of AU\$14.25; four received health education; and 13 would be happy to attend a nurse-led clinic.

Conclusion: Idiopathic childhood constipation is a costly, complex, multi-factorial and prevalent condition that requires early recognition and aggressive treatment to prevent chronicity.

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Nurse-led clinics are cost-effective in terms of benefits relating to significant improvements in idiopathic childhood constipation management. This occurs predominantly through client-centred health education provision and multidisciplinary collaboration, which this exploratory study has found requires significant improvement within the hospital environment.

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1. Introduction

This paper presents and discusses the evidence collected from conducting both a literature review and two-phase exploratory study. These were undertaken in order to explore the aspects of cost, health education provision, and multidisciplinary collaboration related to current inpatient management of idiopathic childhood constipation compared with nurse-led clinics. The level of interest of parents/carers in attending a nurse-led clinic was also assessed.

1.1. Pathogenesis of idiopathic childhood constipation

Idiopathic childhood constipation (ICC) is often associated with either the involuntary or voluntary retention of faeces (Padgett Coehlo, 2011). Whatever the reason for this occurring once faecal matter is retained, the natural function of the bowel to absorb fluid causes the faeces to become hard and impacted, and the rectum to become distended with a loss of contractility and sensitivity (Tortora & Grabowski, 2000). This hard faecal mass can result in painful defaecation that the child is unwilling to repeat, resulting in further retention of faeces, which can then lead to an exacerbation of the condition and to the development of encopresis and enuresis (that is faecal and urinary incontinence, respectively) (Cohn, 2011; Mason, Tobias, Lutkenhoff, Stoops, & Ferguson, 2004). Managing ICC involves disimpaction using Polyethylene Glycol plus Electrolytes (PEG+E), maintenance therapy and consistent ongoing support (National Institute for Health and Clinical Excellence [NICE], 2010).

2. Literature review

Childhood constipation is a world-wide, prevalent condition (van den Berg, Benninga, & Di Lorenzo, 2006) affecting as many as 30% of children depending on diagnostic criteria used (NICE, 2010), and affects both boys and girls alike (Jennings, Davies, Costarelli, & Dettmar, 2009; Loening-Baucke, 2007). Of these, 95% of otherwise healthy children will experience idiopathic (or functional) constipation (Gillespie & Price, 2008), which may coincide with four life-stages, namely the transition from breastmilk to breastmilk substitute, weaning, toilet-training and commencing school (Coughlin, 2003; Hyman et al., 2006).

The guidelines developed by NICE (2010) define ICC as "constipation that cannot (currently) be explained by any anatomical, physiological, radiological or histological abnormalities" (p.4), and were designed to provide a benchmark for the diagnosis and management of ICC while duly considering the individual merits of each case. However, diagnostic and management opinions remain divided amongst health

professionals (Candy & Belsey, 2009; Corkins, 2005; Jennings et al., 2009; Pijpers, Tabbers, Benninga, & Berger, 2009), and while the literature reports that 60% of children with ICC are successfully treated within one year, many remain symptomatic for up to five (Benninga, Voskuil, & Taminau, 2004) or six years (Gillespie & Price, 2008). Furthermore, approximately one quarter experience both chronicity and persistence of symptoms into adulthood, with an increased tendency of developing Irritable Bowel Syndrome (Bongers, van Dijk, Reitsma, & Benninga, 2010).

Whether an intermittent episode or a chronic case, ICC can result in significant burdens to both the health service in terms of funding and resources (Farrell, Holmes, Coldicutt, & Peak, 2003; Guest & Clegg, 2006; Liem et al., 2009), and to the family and child in terms of explicit costs for example, of laxatives (Guest & Clegg, 2006; Zurad & Johanson, 2011); and implicit costs such as psychological, psychosocial and psychoemotional trauma and stress (Amendola, De Angelis, Dall'Oglio, di Abriola, & Di Lorenzo, 2003; Bongers, van Dijk, Benninga, & Grootenhuys, 2009; Devitt, Thornley, & Hinks, 2007; Padgett Coehlo, 2011). Short-term consequences of ICC may include stomach pain, nausea and vomiting (Roper, Logan, & Tierney, 1999), and long-term consequences may result from increased school absenteeism negatively affecting social determinants of health, such as socioeconomic position, employment prospects, human and social capital, and health literacy (Cannon, 2008; Kendall & Li, 2005; Organisation for Economic Co-operation and Development, 2001).

The literature demonstrates the success of nurse-led clinics in managing ICC to be attributable to providing a holistic, client-centred approach; comprehensive health education (including explanations of fundamental bowel structure and function and the pathogenesis of ICC); and ongoing, consistent support in the form of telephone calls and home visits. These factors lead to improved understanding of ICC, adherence to treatment regimens, and increased school attendance, which enhance parent/carer satisfaction and overall quality of life for both the family and child (Burnett, Juszczak, & Sullivan, 2004; Hambleton, Oldam, & Sheils, 2006; Hanson & Bansal, 2006; Howell & Morris, 2009; Ismail, Ratchford, Proudfoot, & Gibbs, 2011; Poenaru et al., 1997; Sullivan, Burnett, & Juszczak, 2006; Woolliscroft & Ghosal, 2005). Furthermore, the literature recognises the value of nurse-led clinics as a concept (Dellagiacomma, 2007; Gillespie & Price, 2008; Wong & Chung, 2006) for being effective in providing parent/carer education, in being best placed for supporting local resources, and for collaborating with and providing current best practice ICC management education for, general practitioners (GPs), child health nurses (CHNs) and school health nurses (SHNs) (Clayden & Keshtgar, 2003; Muir & Burnett, 1999), all of whom are members of the primary health care team.

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