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Parenting and childhood atopic dermatitis: A cross-sectional study of relationships between parenting behaviour, skin care management, and disease severity in young children

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ABSTRACT

Background: The development of child behaviour and parenting difficulties is understood to undermine treatment outcomes for children with atopic dermatitis. Past research has reported on correlates of child behaviour difficulties. However, few research studies have sought to examine parenting confidence and practices in this clinical group.
Objectives: To examine relationships between child, parent, and family variables, parent-reported and directly-observed child and parent behaviour, parents' self-efficacy with managing difficult child behaviour, self-reported parenting strategies, and disease severity.
Design: Cross-sectional study design.
Participants: Parent-child dyads ($N = 64$) were recruited from the dermatology clinic of a paediatric tertiary referral hospital in Brisbane, Australia. Children had a diagnosis of atopic dermatitis of $\geq$3 months and no other chronic health conditions except asthma, allergic rhinitis, or allergy.
Methods: Parents completed self-report measures assessing child behaviour; parent depression, anxiety, and stress; parenting conflict and relationship satisfaction; self-efficacy with managing difficult child behaviour, and use of ineffective parenting strategies; and self-efficacy for managing atopic dermatitis, and performance of atopic dermatitis management tasks. The Scoring Atopic Dermatitis index was used to assess disease severity. Routine at-home treatment sessions were coded for parent and child behaviour.
Results: Pearson's and Spearman's correlations identified relationships ($p < 0.05$) between self-efficacy with managing difficult child behaviour and child behaviour problems, parent depression and stress, parenting conflict and relationship satisfaction, and household income. There were also relationships between each of these variables and use of ineffective parenting strategies. Greater use of ineffective parenting strategies was associated with more severe atopic dermatitis. Using multiple linear regressions, child behaviour and household income explained unique variance in self-efficacy for managing difficult child behaviour; household income alone explained unique variance in use of ineffective parenting strategies. Self-efficacy for managing difficult child behaviour and self-efficacy for managing atopic dermatitis were positively correlated (rho = 0.48, $p < 0.001$), and more successful self-reported performance of atopic dermatitis management tasks correlated with less permissive ($r = 0.35$, $p = 0.005$) and less authoritarian ($r = 0.41$, $p = 0.001$) parenting. Directly observed aversive child behaviour was associated with more severe atopic dermatitis, parent stress, and parent-reported child behaviour problems.
Conclusion: This study revealed relationships between parents' self-efficacy and parenting practices across the domains of child behaviour management and atopic dermatitis management. Parents of

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children with more severe atopic dermatitis may have difficulty responding to child behaviour difficulties appropriately, potentially impacting on illness management. Incorporating parent and parenting support within treatment plans may improve not only child and family wellbeing, but also treatment outcomes.

What is already known about the topic?

- Successful management of childhood atopic dermatitis poses a long-term challenge for parents.
- Where child behaviour difficulties co-occur, parents report lower self-efficacy and less success with management.
- Limited research has examined parenting confidence and parenting practices within this clinical group.

What this paper adds

- More severe atopic dermatitis was associated with less effective parenting strategies and more aversive child behaviour.
- Self-efficacy for managing difficult child behaviour was positively correlated with self-efficacy for managing the child's atopic dermatitis; likewise, ineffective parenting strategies were associated with less successful atopic dermatitis management.
- Improving parents self-efficacy across illness management and behaviour management contexts has potential to improve child and family outcomes.

1. Introduction

Childhood chronic health conditions are common, affecting more than a quarter of children in countries including Australia (37%) (Australian Institute of Health and Welfare, 2012) and the US (26.6%) (Van Cleave et al., 2010), and the prevalence of many conditions is increasing (e.g. Asher et al., 2006; Van Cleave et al., 2010). Although advances in prevention and management continue to reduce morbidity and mortality (United Nations Inter-agency Group for Child Mortality Estimation, 2015), the role that parenting plays in influencing children's physical and psychological health remains crucial (Wood et al., 2008).

Challenges facing parents of children with chronic health conditions include competently and consistently implementing an illness management routine to which the child may be uncooperative or resistant (Morawska et al., 2015). Importantly, children with chronic health problems are at increased risk of behavioural and emotional difficulties, including both externalising (e.g. aggression) and internalising (e.g. anxiety, depression, social withdrawal) behaviours (Blackman et al., 2011; Pinquart and Shen, 2011). It is not surprising, therefore, that child behaviour problems are associated with greater parent-reported difficulties with illness management (Burgess et al., 2008; Chiang et al., 2003; Gerson et al., 2004; Morawska et al., 2008).

Among those conditions frequently associated with child behaviour and parenting difficulties is atopic dermatitis. A chronically relapsing inflammatory skin condition with a complex and multifactorial aetiology, atopic dermatitis is synonymous with "atopic eczema" (Brown, 2016). It affects 17% of children in Australia (UK 16%, New Zealand 15%, Canada 12%; Asher et al., 2006), with onset typically in infancy or early childhood (Ben-Gashir et al., 2004; Kay et al., 1994). Although some children do go into remission (Illi et al., 2004), the course is usually relapsing and remitting, and may continue into adulthood (Williams and Strachan, 1998). Symptoms in children include dry skin, a papular rash, and intense pruritis. Although the typical presentation of atopic dermatitis varies with child age, it is the intense pruritis that is the major cause of morbidity across age groups, leading to scratching, skin excoriation and lichenification, bleeding, and increased risk of infection.

Management, especially for children with severe atopic dermatitis, can be time-consuming (Su et al., 1997), and adhering to a standard treatment routine of emollient baths, topical medications, moisturisers, and wet-wrapping, can be unpleasant and distressing for parents and children alike (Chamlin et al., 2004; Elliott and Luker, 1997; Santer et al., 2013). Achieving good long-term management is crucial, however, to reduce impact on the child and family, and to avoid unnecessary hospitalisation and escalation of treatments that may result from lack of adherence to the child's treatment plan (Cathcart and Theos, 2011; Krejci-Manwaring et al., 2007).

Children with atopic dermatitis are at increased risk of internalising and externalising disorders (Absolon et al., 1997; Daud et al., 1993; Dennis et al., 2006; Elliott and Luker, 1997; Reichenberg and Broberg, 2004) and attention-deficit hyperactivity disorder (Riis et al., 2016; Schmitt et al., 2009) compared to their healthy peers. Parents report difficulties with managing child behaviour problems (Daud et al., 1993; Faught et al., 2007) such as using ineffective discipline strategies and "giving in" to difficult child behaviour (Daud et al., 1993), and are more likely to report increased depression, anxiety, and parenting stress, which seem to correlate with atopic dermatitis severity (Faught et al., 2007; Pauli-Pott et al., 1999). Multiple studies have revealed the impact that parenting a child with atopic dermatitis can have on the parents' quality of life and couple relationship (Daud et al., 1993; Elliott and Luker, 1997; Lawson et al., 1998; Pustisek et al., 2016).

There is increasing recognition that management of childhood illness and management of difficult child behaviour are not mutually exclusive domains of parenting behaviour. Parents need to be skilful in managing child behaviour to protect and promote child and family wellbeing, in addition to having the necessary knowledge and capacity to meet their child's illness management needs (Morawska et al., 2015). Families of children with chronic health problems tend to report more negative parent-child relationships (Pinquart, 2013); however, the ability of parents to develop supportive, affectionate relationships with their children, and use effective parenting strategies to confidently deal with problem behaviours, may contribute to greater success in managing their child's health condition (e.g. Davis et al., 2001; Morawska et al., 2008).

A wealth of evidence exists to confirm the negative impact of parenting stress and conflict on children's physical and emotional health (e.g. Bzostek and Beck, 2011; Hanington et al., 2012; Troxel and Matthews, 2004). Deterioration of the parent-child relationship and increased use of dysfunctional parenting practices increases the risk of child emotional and behavioural problems and subsequently impacts on the child's physiological stress-response system (Troxel and Matthews, 2004). This may be particularly significant in the context of atopic diseases such as atopic dermatitis, where the role of stress as a trigger of disease onset and exacerbation is well recognised (Arndt et al., 2009). Despite reports of child behaviour and parenting difficulties in this clinical group, the relationship between parenting practices and management of childhood atopic dermatitis has received little attention in the literature, and research incorporating direct observation of child and parent behaviour in this group is scarce,