



Cumulative risk effects for the development of behaviour difficulties in children and adolescents with special educational needs and disabilities



Jeremy Oldfield ^{a,*}, Neil Humphrey ^b, Judith Hebron ^b

^a Department of Psychology, Manchester Metropolitan University, Birley Building, 53 Bonsall Street, Manchester M15 6GX, UK

^b Manchester Institute of Education, The University of Manchester, Manchester, UK

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ABSTRACT

Research has identified multiple risk factors for the development of behaviour difficulties. What have been less explored are the cumulative effects of exposure to multiple risks on behavioural outcomes, with no study specifically investigating these effects within a population of young people with special educational needs and disabilities (SEND). Furthermore, it is unclear whether a threshold or linear risk model better fits the data for this population. The sample included 2660 children and 1628 adolescents with SEND. Risk factors associated with increases in behaviour difficulties over an 18-month period were summed to create a cumulative risk score, with this explanatory variable being added into a multi-level model. A quadratic term was then added to test the threshold model. There was evidence of a cumulative risk effect, suggesting that exposure to higher numbers of risk factors, regardless of their exact nature, resulted in increased behaviour difficulties. The relationship between risk and behaviour difficulties was non-linear, with exposure to increasing risk having a disproportionate and detrimental impact on behaviour difficulties in child and adolescent models. Interventions aimed at reducing behaviour difficulties need to consider the impact of multiple risk variables. Tailoring interventions towards those exposed to large numbers of risks would be advantageous.

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1. Introduction

1.1. Behaviour difficulties and special educational needs and disabilities

Childhood and adolescent behaviour difficulties are often described as externalising behaviours that have disruptive and disturbing effects on others and include verbal and physical abuse, fighting, vandalism, lying and stealing (e.g. Goodman, 2001). These behaviours displayed in childhood and adolescence not only have immediate and profound effects on learning environments and academic achievement (Mcintosh, Flannery, Sugai, Braun, & Cochrane, 2008), but are also associated with a number of more negative outcomes such as unemployment (Healey, Knapp, & Farrington, 2004), perpetration of crime (Fergusson, Horwood, & Ridder, 2005) and increased costs to society (Scott, Knapp, Henderson, & Maughan, 2001).

* Corresponding author. Tel.: +44 161 247 2867.

E-mail address: j.oldfield@mmu.ac.uk (J. Oldfield).

There is a substantial research base investigating the causes and correlates of childhood and adolescent behaviour difficulties (Brown & Schoon, 2008; McIntosh et al., 2008; Schonberg & Shaw, 2007). These influences can be called risk factors when the given variable is not only significantly related to the outcome in question (i.e. behaviour difficulties) but also found to precede it temporally (Offord & Kraemer, 2000). For the purpose of the current study a risk factor is defined as “a measurable characteristic in a group of individuals or their situation that predicts negative outcome on a specific outcome criteria” (Wright & Masten, 2005, p.9).

One of the most at-risk groups for behaviour difficulties is young people with special educational needs and disabilities (SEND) (Murray & Greenberg, 2006). The current definition of SEND in England is when a child “has a learning difficulty which calls for special educational provision to be made for him” (Education Act, 1996, Section 312).

A national study within the UK found that over half of children and adolescents who met the clinical criteria for conduct problems were considered to have SEND by their teacher (Green, McGinnity, Meltzer, Ford, & Goodman, 2005). It is perhaps not surprising that students with SEND are widely considered to be the one of the most vulnerable in the education system (Humphrey, Wigelsworth, Barlow, & Squires, 2013). Despite comprising nearly one fifth of the school population in England, which equates to nearly 1.50 million children (Department for Education, 2014), little research has paid attention to this specific population (for an exception see Oldfield, 2012), with no studies to date having assessed the influence of multiple risk factors on behavioural outcomes.

1.2. Cumulative risk

Previous research has often studied risk factors for behaviour difficulties in isolation whereas, in reality they are not independent of one another and frequently cluster together within or around the same individual (Flouri & Kallis, 2007). Young people often experience multiple risks in their backgrounds and across distinct contexts, which impinge on their functioning (Sameroff, Gutman, & Peck, 2003). Focusing on the unique influence of a single factor is unlikely to provide a sufficient explanation of any behaviour displayed, as it is the presence and combination of multiple risks in an individual's background that ultimately result in behaviour difficulties. As every individual experiences a different combination of risk factors, no single factor when present can be said to completely account for these problems (Dodge & Pettit, 2003). Therefore, to further our understanding of risk, and how these factors impact on behavioural outcomes, research needs to consider multiple factors simultaneously.

A number of analytical methodologies have been proposed in the literature in order to assess the effects of multiple risk, (Jones, Forehand, Brody, & Armistead, 2002). One approach is to use a regression analysis where multiple variables are independently added into the model (Gutman, Sameroff, & Cole, 2003). This approach will allow the unique relationships between contextual risks and problem behaviours to be observed and is useful for establishing the specific risk factors that are the strongest predictors of a certain outcome. Nonetheless, these risks in isolation are only able to account for small amounts of variance (Forehand, Biggar, & Kotchick, 1998; Dodge & Pettit, 2003), and there may also be power issues which limit the number of factors that can be included in a model at the same time (Ackerman, Izard, Schoff, Youngstrom, & Kogos, 1999). As this method assumes variables are independent from one another, this neglects the fact that risks are often found to cluster within individuals and are therefore likely to be related in some way (Flouri & Kallis, 2007). An alternative method which overcomes some of these limitations has been termed the cumulative risk model.

The basic premise of cumulative risk models (Gerard & Buehler, 2004a) is that assessing risk variables in combination – specifically by summing them to produce a cumulative risk score – will result in a better predictive model than could be achieved if their influences were assessed independently (Appleyard, Egeland, Van Dulmen, & Sroufe, 2005; Evans, Kim, Ting, Tesser, & Shanis, 2007; Forehand et al., 1998). There are two underlying assumptions of cumulative risk models. First, that the total number of risk factors to which an individual is exposed holds a greater influence over development than any specific risk factor or particular combination of risk factors. Number is therefore seen as more important than type or kind of risk (Morales & Guerra, 2006). This idea is rooted in the principle of equifinality (Dodge & Pettit, 2003), which proposes that a negative behavioural outcome does not occur via a specific route but rather occurs via several distinct pathways. For children with SEND this may result from feelings of incompetence due to problems associated with cognition and learning (Moilanen, Shaw, & Maxwell, 2010), or feeling frustrated at not being able to communicate and interact with others effectively (Hebron & Humphrey, 2014). Thus, as these stressors increase they may well overwhelm any coping mechanisms a child has in place, resulting in disorder and behaviour problems (Flouri & Kallis, 2007).

The second assumption is that those individuals who live in environments where there are more risks for behaviour difficulties are at an increased likelihood of suffering problems than those exposed to fewer risks. That is, the larger the number of risks the greater the prevalence of problem behaviour (Trentacosta et al., 2008). Children with SEND experience a greater number of risks, as having lower economic status (Schonberg & Shaw, 2007), speaking English as an additional language (Brown & Schoon, 2008), and lower academic achievement (McIntosh et al., 2008), are key risk factors for developing behaviour difficulties generally and also salient characteristics of the SEND population (Department for Education, 2014). Multiple risk factors therefore influence behaviour problems by working in a cumulative manner, where exposure to each additional risk factor results in an increase in the problem behaviour, irrespective of the specific risks

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