Research in Developmental Disabilities 72 (2018) 152–165

Contents lists available at ScienceDirect

Research in Developmental Disabilities

journal homepage: www.elsevier.com/locate/redevdis

Review article

The relationship of parental expressed emotion to co-occurring psychopathology in individuals with autism spectrum disorder: A systematic review

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ARTICLE INFO

Number of reviews completed is 2

Keywords:
Autism spectrum disorder
Expressed emotion
Co-occurring disorders
Psychopathology
Family characteristics

ABSTRACT

Expressed emotion is a construct of the affective relationship between two people, with domains measuring criticism, hostility, warmth, relationship and emotional over-involvement. This review focuses on studies of Expressed Emotion in families of individuals with autism spectrum disorder and its association with co-occurring psychiatric disorders. A systematic search used the Psych-Info and Medline databases to identify articles available at or before September 2016. Eleven studies met the inclusion criteria.

The included studies suggest that high levels of expressed emotion, including criticism, are associated with behavioural problems. However, the relationship between expressed emotion and emotional problems is presently unclear because findings were mixed. Also, there is presently little evidence regarding the impact of other components of expressed emotion on co-occurring disorders.

1. Introduction

Autism spectrum disorder (ASD) is a severe and lifelong neurodevelopmental disorder affecting at least 1% of children (Baird et al., 2006; Charman, 2002). It is characterized by pervasive impairments in social communication and stereotyped and restricted interests. In addition to these core symptom of autism, 70–90% of children with ASD have significant additional psychiatric disorders that impair their everyday functioning and reduce quality of life for themselves and their families (Hofvander et al., 2009; Salazar et al., 2015; Simonoff et al., 2008b) The most common diagnoses are anxiety disorders, attention-deficit/hyperactivity disorder (ADHD), and oppositional defiant disorder (ODD) (Baron-Cohen, Wheelwright, Hill, Raste, & Plumb, 2001; Charman, 2008; Duverger, Da Fonseca, Bailly, & Deruelle, 2007; Engstrom, Ekstrom, & Emilsson, 2003; Rogé, Barthélémy, & Magerotte, 2008; Shamay-Tsoory 2008; Simonoff et al., 2008a). These rates of psychiatric disorder are roughly 5- to 10-times higher than those reported in the general population of youth. The reasons for this increase are only partially understood; while it is likely that shared genetic risk factors predominate in the co-occurrence with neurodevelopmental disorders such as ADHD (Lundström et al., 2015), this explanation does not appear to apply to anxiety disorders (Hallett, Ronald, & Happé, 2009). Parental and family influences are recognized to be important factors for the development and/or maintenance of psychopathology amongst typically developing (TD, without ASD) children; family factors include demographic characteristics such as family structure, social class and socioeconomic position, but also characteristics that may relate more proximally to the child's environment, such as family cohesion, parenting style and emotional tone (Ford, Goodman, & Meltzer, 2004). However, amongst children with ASD, there is less research on the role of

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https://doi.org/10.1016/j.ridd.2017.10.022
Received 21 February 2017; Received in revised form 5 October 2017; Accepted 24 October 2017

family and parenting factors and their relationship to additional psychopathology. Studies have reported that parental stress (Bauminger, Solomon, & Rogers, 2010; Osborne & Reed, 2010), controlling parenting style and household chaos are associated with higher rates of behaviour problems (Boonen et al., 2014); whereas parental warmth (Midouhas, Yogaratnam, Flouri, & Charman, 2013) and limit-setting (Osborne & Reed, 2010) are related to lower levels of problem behaviour in children with ASD. However, the overwhelming majority of studies are cross-sectional and the direction of effect is unclear. Although there is evidence of some decrease of autism symptoms and behaviour problems over time (Seltzer, Shattuck, Abbeduto, & Greenberg, 2004; Shattuck et al., 2007), ASD is a lifelong disorder which presents multiple challenges for families at each stage of the life course. These stressful daily experiences subsequently may have a negative impact on parental well-being (Smith, Seltzer, & Greenberg, 2012), and a number of studies report that parents of children with ASD experience high levels of stress as caregivers (Giovagnoli et al., 2015; Gong et al., 2015). The behavioural problems presented by many children on the autism spectrum are one of the most significant sources of stress for families (Hastings, Daley, Burns, Beck, MacLean et al., 2006; Hastings et al., 2005; Lounds, Seltzer, Greenberg, & Shattuck, 2007).

A particular focus of psychopathology research in general has been the affective (emotional) relationship between parents/carers and their relatives and previous studies have found this to be a significant risk marker for poor outcomes among people with various mental health problems. Perhaps the best-established and most researched construct for measuring the emotional relationship is expressed emotion (EE) (Hastings & Lloyd, 2007a). EE is a construct that encapsulates several domains, including the level of *warmth (WARM)*, the intensity of feeling which the parent expresses about their child; *criticism,* critical statements or those that find fault with the child; and/or *emotional over-involvement (EOI*), an emotional relationship based on self-sacrificing behaviour or lack of objectivity towards the child, on behalf of the parent. Measures of EE can generate a number of domains but traditionally the overarching measure of "high" EE is met when the number of critical comments exceeds a set threshold, or by the presence of low WARM or marked EOI (Vaughn & Leff, 1976). The importance of the concept for child psychopathology research is supported by studies showing, in both cross-sectional and longitudinal studies, associations between high EE and internalizing and externalizing problems in child and adolescent community and clinical populations (Asarnow, Tompson, Woo, & Cantwell, 2001; Peris & Hinshaw, 2003b; Stubbe, Zahner, Goldstein, & Leckman, 1993; Vostanis, Nicholls, & Harrington, 1994b).

While considerably less research has been devoted to environmental factors in ASD, the high rates of additional psychopathology underline the importance of identifying risk factors that may affect the development and/or maintenance of co-occurring emotional and behavioural problems, because these could provide targets for intervention.

The present review will provide an introduction to the construct of EE and how it is measured and applied to parent–child relationships. We then review the existing studies of EE and additional psychopathology in families of individuals with ASD and discuss the implications of these findings. Finally, we discuss and identify future research directions.

2. The construct of expressed emotion

EE is a concept that describes aspects of the affective relationship between two people. It can be measured in different ways and contains distinct domains characterized by warmth, criticism/hostility or negative comments, the quality of the dyadic relationship and emotional over-involvement. EE was first explored in patients with schizophrenia and their relatives (Vaughn & Leff, 1976). The novel finding, robustly supported by subsequent studies, was that patients with schizophrenia living with relatives who directed high levels of expressed emotion towards the patients showed greater rates of subsequent relapse (Butzlaff & Hooley, 1998).

The concept of EE and the original coding scheme were derived from information elicited in the he Camberwell Family Interview (CFI) (Leff & Vaughn, 1985). This semi-structured interview remains the gold standard instrument for assessing the emotional climate between two individuals. Characteristics of the dyadic relationship are inferred from the informant's oral description of the other person and the nature of their relationship. Audio recordings of the interview are coded on five scales on five scales: (1) critical comments (CC,a frequency count); (2) hostility (rated 0–3); (3) positive remarks (PC, a frequency count); (4) emotional over-involvement (EOI), rated 0–5 and (5) warmth (WARM, rated 0–5). The scores for hostility, WARM, and EOI are global evaluations rated at the end of the interview.

Despite being the gold standard, several issues have limited the use of the CFI and other measures have been developed. First, researchers require extensive training in the administration and coding of the instrument for its application to be valid. Second, the interview administration and coding are time-consuming, limiting its use in large samples. Finally, it requires the availability of a relative for interview face to face, which may be limiting when they are not available or the index participant does not agree to their involvement. To resolve these problems, alternative instruments have been developed.

2.1. Five minute speech sample (FMSS)

The FMSS is the most widely used brief measure (Magana, Goldstein, Karno, & Miklowitz, 1986). It has the advantage of being based on the CFI, is quick to administer, takes less time to code and requires less training to use. Parents (or other relatives) are instructed to talk about the target child for a period of 5 min. The parent is asked to talk about what the child has been like over the last six months, including what kind of person the child is, the relationship the parent and the child have and how the two of them get along.

Six different domains of EE are coded from the FMSS: 1. initial statement (IS)– the first statement the parent makes about her child (coded either positive, neutral or negative); 2. criticism – negative comments made by the parent about the child (coded as a frequency count); 3. relationship (REL) – evidence that the parent enjoys and values spending time with the child; 4. positive remarks – any statement about the child which is positive in nature (coded as a frequency count); 5. dissatisfaction – describes a child's