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Review article

Facial emotion recognition in child psychiatry: A systematic review

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ABSTRACT

This review focuses on facial affect (emotion) recognition in children and adolescents with psychiatric disorders other than autism. A systematic search, using PRISMA guidelines, was conducted to identify original articles published prior to October 2011 pertaining to face recognition tasks in case–control studies. Used in the qualitative synthesis were: 2 studies on schizophrenia, 18 on mood disorders, 16 on anxiety disorders, 4 on eating disorders, 14 on ADHD and 9 on conduct disorder.

Our review suggests that there are abnormalities in facial emotion recognition in a wide range of child psychiatric disorders and that these are likely to have a negative effect on both family and peer relationships. Scope for further research has been identified.

Contents

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1. Introduction

Facial recognition impacts on social functioning, peer relationships and behaviour and is the ability to determine facial emotions or differentiate familiar and unfamiliar faces. This is important for successful interaction with others and to actively participate in the social environment (Morris, Weickert, & Loughland, 2009) and is also vital for the development of the perceptual components of Theory of Mind (ToM) (Korkmaz, 2011). This review focuses on facial affect (emotion) recognition in children and adolescents: commonly measured by identifying emotions of photographs of strangers from available series (Ekman & Friesen, 1976).

Since the early 1980s (Walker, 1981) there have been various studies on facial emotion recognition in children and adolescents across the psychiatric disorders. Previous reviews on facial recognition in children and adolescents have largely focused on those with autism: Sasson (2006) reviewed the development of face processing in autism, Harms, Martin, and Wallace (2010) reviewed facial emotion recognition in autism and Jemel, Mottron, and Dawson (2006) reviewed facial processing in autism. To date, no review has collated findings across all psychiatric disorders in children and adolescents.

The research in other childhood psychiatric disorders is not as comprehensive at it is in autism. There is a small body of literature on affective disorders in children and adolescents: a review of early onset bipolar affective disorder (BPAD) included consideration of face processing (Terry, Lopez-Larson, & Frazier, 2009) and Davidson and Slagter (2000) reviewed the literature on neuroimaging of affect and disorders of affect in children. Davidson and Slagter (2000) found studies evidencing that the amygdala plays an important role in affective face processing in children, similar to the patterns of activation observed in adults. There have also been reviews on face recognition regarding several psychiatric disorders in the adult literature. Most of these have focused on differences in schizophrenia compared to controls. Emotional face processing (Morris et al., 2009), facial expression and affective prosody recognition (Edwards, Jackson, & Pattison, 2002), face processing in the domains of emotion recognition, identity recognition and complex social judgements (Marwick & Hall, 2008) and facial emotion recognition in schizophrenia (Kohler & Brennan, 2004) have been examined in reviews. Silverstein and Keane (2011) reviewed research from 2005 to 2010 of perceptual organisation (PO) dysfunction in schizophrenia. Marsh and Williams (2006) compared facial affect recognition and visual scanpaths in the literature across the age ranges for schizophrenia and ADHD.

There have been fewer reviews focused on other mental disorders but face recognition in both BPAD (de Almeida Rocca, van den Heuvel, Caetano, & Lafer, 2009) and depression (Bourke, Douglas, & Porter, 2010) has been reviewed. On reviewing the literature on facial processing in ADHD and schizophrenia Marsh and Williams (2006) proposed that emotion recognition in ADHD may be due to failure to correctly interpret affect due to inattention and/or impulsivity where as in schizophrenia it may be due to distorted or biased information processing. de Almeida Rocca et al.'s (2009) review examined facial recognition across the age range in bipolar affective disorder in studies published between 1990 and 2008 which had greater than 10 subjects. de Almeida Rocca et al. (2009) reported that impairments in emotion recognition were found in euthymic bipolar disorder (disgust and fear) and mania (fear and sadness). Emotion recognition impairment was found in paediatric BPAD patients who had a tendency to misjudge extreme facial expressions as being moderate or mild in intensity. Many studies summarised in the de Almeida Rocca et al. (2009) review strengthened the evidence for involvement of the ventrolateral prefrontal cortex and amygdala in BPAD. Patients with BPAD were found to be more accurate in recognising emotions than those with depression and schizophrenia.

Bourke et al.'s (2010) review found that, relative to healthy controls, patients with major depression show: a negative response bias towards sadness, increased vigilance and selective attention towards sad facial expressions and away from happy expression and reduced general accuracy of recognition of sad and happy facial expressions. The evidence of specificity to these emotions is however limited. Impairments may vary according to clinical state and response to treatments, but there may also be trait abnormalities. Functional imaging differences include over-activity of amygdala and reduced activation of higher processing prefrontal cortical areas.

A meta-analysis by Wilson, Juodis, and Porter (2011) reviewed studies on facial affect recognition in psychopathy. Comparing each effect size to zero revealed only very small positive correlations between psychopathy and affect recognition for all emotions, the largest observed deficits being for fear and sadness. Studies using a verbal response style reported greater deficits affect recognition deficits than those with nonverbal response style.