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Outcomes of cognitive behaviour therapy for obsessive–compulsive disorder in young people with and without autism spectrum disorders: A case controlled study

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ABSTRACT

Obsessive–compulsive disorder (OCD) and autism spectrum disorders (ASD) are highly co-morbid. It is suggested that youth with ASD will respond less well to cognitive behaviour therapy (CBT), as compared to their typically developing counterparts. To date there is no empirical evidence to support this view. The current study sought to compare CBT for OCD outcomes among youth with and without ASD. 22 young people with ICD-10 diagnoses of OCD and ASD (OCD+ASD) were matched with 22 youth with OCD, but no ASD (OCD+NoASD) according to base line OCD symptom severity, age, and gender. Outcomes were assessed for the two groups following a course of individually tailored, but protocol-driven CBT for OCD. While both groups responded to treatment the OCD+ASD group's outcomes were inferior to the OCD+NoASD group, as indicated by a significantly smaller decrease in symptoms over treatment (38.31% vs. 48.20%) and lower remission rates at post-treatment (9% vs. 46%). Overall, young people experiencing OCD in the context of ASD benefitted from CBT, but to a lesser extent than typically developing children. Recent efforts to modifying standard CBT protocols for OCD in ASD should continue in order to optimise outcomes among youth with this particular dual psychopathology.

1. Introduction

Obsessive Compulsive Disorder (OCD) is characterised by unwanted intrusive thoughts, images or urges (termed obsessions) and associated repetitive or ritualistic behaviours (termed compulsions; World Health Organization, 1992; American Psychiatric Association, 2013). One of the peak onset periods of OCD is late childhood (Geller et al., 1998) and the population prevalence ranges from 0.35–4% prevalence up to 18 years of age (Weissman et al., 1994; Zohar, 1999; Fogel, 2003; Heyman et al., 2006).

Cognitive behaviour therapy (CBT) that includes exposure with response prevention (E/RP) has accumulated a wealth of evidence to support its efficacy in treating paediatric OCD (The Pediatric OCD Treatment Study (POTS) Team, 2004; Watson and Rees, 2008) and it is recommended as the first line treatment for young people (National Institute for Health and Care Excellance, 2005; Geller and March, 2012). Although CBT is known to be efficacious in the context of clinical trials with selected patient groups, the extent to which these findings generalise to treating young people with complex co-morbidities in routine clinical practice remains unclear. In particular, young people with autism spectrum disorders (ASD) are typically excluded from clinical trials (National Institute for Health and Care Excellance, 2005). Little empirical attention has been given to treating OCD in this population (Neil and Sturmey, 2014) despite prevalence being elevated in the OCD population (Ivarsson and Melin, 2008; Ivarsson et al., 2008) although the two constructs do not seem intrinsically linked (Weidle et al., 2012).

ASD are a continuum of neurodevelopmental disorders categorised by difficulties in reciprocal social interaction, communication, imagination and having restrictive/stereotyped repetitive interests (World Health Organization, 1992; American Psychiatric Association, 2013). Prevalence rates of OCD are significantly elevated among individuals with ASD with a recent review suggesting a median of 10% incidence ranging 1.47–37.2% across seven large scale studies (Neil and Sturmey, 2014). Previous studies have shown inconsistent differences in OCD symptom profiles in young people with ASD and OCD compared to neurotypical (individuals without a neurodevelopmental disorder) youth (Mack et al., 2010; Lewin et al., 2011b). Inconsistencies are also evident when including adult data as well (Russell et al., 2005). While Mack et al. (2010) found no differences in

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obsessive symptoms in children with ASD and OCD compared to a neurotypical OCD group, Lewin et al. (2011b) found the ASD and OCD group reported significantly less sexual obsessions. Furthermore, Lewin et al. (2011b) found the ASD and OCD sample were less likely to report washing, checking and repeating compulsions whereas Mack et al. (2010) found no statistical differences, but only a trend in the ASD and OCD group to report less games/superstitious compulsions compared to neurotypical controls.

However, given that the subjective experience of OCD is similar between those with and without ASD (namely that it is experienced as distressing, anxiety provoking and ego-dystonic), can be assessed (albeit with less sensitivity) within the autistic phenotype i.e. repetitive behaviours (Wu et al., 2013; Neil and Sturmey, 2014) and there is a wealth of literature supporting CBT for OCD in neurotypical youth (National Institute for Health and Care Excellance, 2005), then it follows that CBT might be an effective treatment modality. Nevertheless, clinical experience suggests that these individuals are particularly difficult to treat. For this reason, it has been widely suggested that protocols may need to be modified to account for the cognitive, behavioural and emotional phenotypes associated with ASD (Wood et al., 2009; Russell et al., 2013; Scarpa et al., 2013).

The evidence for CBT in treating OCD specifically in paediatric ASD samples is strikingly limited. Three single case studies of tailored individual treatment have reported encouraging results (Reaven and Hepburn, 2003; Lehmkuhl et al., 2008; Elliott and Fitzsimons, 2014). In the largest study to date, Farrell et al. (2012) examined the impact of complex co-morbidities, including Pervasive Developmental Disorders (PDD), on outcomes following group CBT for OCD. They found that approximately 61% of young people with PDD responded to group CBT and approximately 39% achieved a remission. Importantly, they found no significant differences in response or remission rates among those with PDD as compared to those without, potentially suggesting that ASD may not impede CBT outcomes and therefore modification of standard protocols is not necessary. However, as the authors note, the sample size was relatively small ($N=15$ participants with PDD; $N=43$ total sample) and therefore the study may have been underpowered to detect group differences.

There is a growing body of literature to support the treatment efficacy of modified CBT for mixed anxiety disorders in paediatric ASD samples (White et al., 2009; Lang et al., 2010). Response rates associated with modified family-based CBT have been found to vary between group and individual treatments. Reaven et al. (2012) found a 50% response rate to multi-family group CBT although only cases where generalised anxiety disorder was the principal diagnosis were significant differences in remission observed between treatment and wait-list controls.

However, in well-controlled individual family-based CBT interventions (see Lang et al., 2010 review for more information on studies with methodological problems), response rates range from 75–76.9% and remission rates range from 38–52.9%. (Wood et al., 2009; Storch et al., 2013). Although these latter findings are encouraging for individual CBT, these trials (both group and individual) either included very few OCD cases (Wood et al., 2009; Storch et al., 2013) or OCD cases were not included at all (Reaven et al., 2012). A commonality between these trials however, is greater family involvement in treatment with specific modules or session tasks focused on parental knowledge/strategies and parent-child interactions (Wood et al., 2009; Reaven et al., 2012; Storch et al., 2013) The only RCT to date focusing on treating OCD specifically in individuals with an ASD recruited a wide age range (14–65 years; Russell et al., 2013), but the majority of participants (72%) were adults (Russell et al., 2013). Forty-six patients with ASD and co-morbid OCD were randomized to CBT for OCD or anxiety management (AM), a plausible control treatment. Treatments were matched in duration (mean of 17.4 sessions CBT; 14.4 sessions AM). Treatment response was defined as $>25\%$ reduction in YBOCS total severity scores. Both treatments produced a significant reduction in OCD symptoms, within-group effect sizes of 1.01 CBT group and 0.6 for the AM group. There were no statistically significant differences between the two groups at end of treatment, although there were more responders in the CBT group (45% vs 20%). The lack of significant between group differences may be attributable to a range of factors including modest power to detect significant differences, coupled with modest effect sizes of CBT and the unexpectedly high effects of the control condition for mild cases (Russell et al., 2013).

Overall, it is challenging to compare the results of the aforementioned studies as the demographics of the participants, range of anxiety disorders included, severity of initial presentation, tools for measuring diagnosis and criteria for determining response and remission rates vary. The question of how effective CBT is for paediatric OCD within the context of ASD, therefore remains unanswered.

In summary, CBT for OCD has been shown to be an efficacious treatment for typically developing young people. There is a paucity of studies investigating CBT for OCD in young people with ASD. It has been suggested that CBT requires modification in order to optimise outcomes in young people with ASD, but to date this suggestion has not been supported by any study of outcomes for standard CBT for OCD in young people with ASD. The current study sought to address this gap in the literature and aimed to compare outcomes to standard CBT for OCD in a group of youth with ASD compared to a matched neurotypical control sample treated in the same specialist clinical service. It was hypothesised that CBT for OCD would be associated with a significant reduction in symptoms in both groups, but that the ASD group would respond significantly less well than the neurotypical group.

2. Method

2.1. Participants

Participants for the study were selected from consecutive referrals ($N=387$) to a national specialist OCD Clinic in the United Kingdom between January 2007 and December 2011. Three hundred and 36 (86.6%) of these referrals had a primary diagnosis of OCD meeting ICD-10 criteria. The diagnoses were made following an approximately three hour assessment by a multidisciplinary specialist team led by a consultant psychiatrist where an in depth psychiatric history is completed with the child's main care-giver alongside the CY-BOCS interview being completed with the young person (for a more in depth description see Nakatani et al., 2011). Two groups were identified from a subset of the consecutive referrals where pre- and post-treatment data were available ($N=204$): patients with OCD and ASD (OCD+ASD) and individually matched patients with OCD and no ASD (OCD+NoASD).

In total, 22 patients were identified who had confirmed diagnoses of OCD and ASD, and had undergone a course of CBT and had pre- and post-treatment data available (i.e. scores on the Children's Yale-Brown Obsessive–Compulsive Scale; CY-BOCS). ASD diagnoses had generally been made prior to referral to the specialist OCD Clinic by a Consultant Psychiatrist in a community Child and Adolescent Mental Health Service (CAMHS). In the majority of cases, ($N=15$; 68%) the ASD diagnosis had been verified by a trained clinician completing a structured diagnostic instrument with the young person, namely the Autism Diagnostic Observation Schedule (ADOS), Autism Diagnostic Interview-Revised (ADI-R) or both. The ASD diagnoses made under ICD-10 criteria were as follows: Asperger's syndrome ($N=15$), High Functioning Autism ($N=2$) and PDD–NOS ($N=5$).

The control group comprised of 22 typically developing cases selected from a data set where all participants had an ICD-10 diagnosis of OCD (OCD+NoASD) and who had received a course of CBT and had pre- and post-treatment CY-BOCS scores available