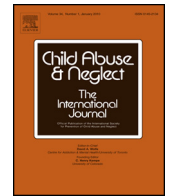


Contents lists available at [ScienceDirect](#)

Child Abuse & Neglect



A study of Attachment Disorders in young offenders attending specialist services



Kate Moran^{a,*}, Jennifer McDonald^b, Alison Jackson^a, Sue Turnbull^a, Helen Minnis^a

^a Adverse Childhood Experiences Centre, Mental Health and Wellbeing, University of Glasgow, Gartnavel Royal Hospital, 1055 Great Western Road, Glasgow, Scotland G12 0XH, United Kingdom

^b Forensic Child and Adolescent Mental Health, Ferguson Smith Centre, Dalnair Street, Glasgow, Scotland G3 8SJ, United Kingdom

ARTICLE INFO

Article history:

Received 14 October 2015

Received in revised form

29 December 2016

Accepted 11 January 2017

Keywords:

Attachment Disorder

Reactive Attachment Disorder

Disinhibited Social Engagement Disorder

Young offender

Maltreated children

ABSTRACT

Attachment disorders, specifically Reactive Attachment Disorder (RAD) and Disinhibited Social Engagement Disorder (DSED) are disorders associated with neglect and abuse in which people have significant difficulties relating to others. This study aims to explore Attachment Disorder symptoms and diagnoses in young offenders and factors that may be associated with them such as mental health problems. A cross-sectional design was used with 29 young people who were known to Intensive Services, aged 12–17 ($M = 16.2$, $SD = 1.3$), 29 carers and 20 teachers. They completed measures investigating symptoms of Attachment Disorders and psychopathology. Eighty-six percent of the young people had experienced some form of maltreatment and the rates of an actual or borderline Attachment Disorder was 52%. A positive correlation between Attachment Disorder symptoms and other mental health problems (as rated by carer-report Strengths and Difficulties Questionnaire Total Difficulties Score), accounting for 36% of the variance was found, with a large effect size ($r_s = 0.60$). Attachment Disorder symptoms were associated with hyperactivity and peer relationship problems.

© 2017 Published by Elsevier Ltd.

1. Introduction

1.1. Attachment Disorders (Reactive Attachment Disorder (RAD) and Disinhibited Social Engagement Disorder (DSED))

RAD and DSED are characterized by ‘markedly disturbed and developmentally inappropriate social relatedness in most contexts; beginning before age five’ (Diagnostic and statistical manual of mental disorders fifth edition, DSM 5, [APA, 2013](#)). The behaviors are thought to arise from persistent caregiver neglect, physical or emotional abuse or a lack of continuity in caregivers that prevents the formation of stable attachments, for example frequent changes in foster care. Throughout the paper the term “attachment disorder” will be used to refer to both RAD and DSED collectively, unless otherwise specified.

* Corresponding author.

E-mail addresses: Kate.Moran@ggc.scot.nhs.uk, Kate.Moran@lanarkshire.scot.nhs.uk (K. Moran), Jennifer.McDonald@ggc.scot.nhs.uk (J. McDonald), Alison.Jackson@glasgow.ac.uk (A. Jackson), sue.turnbull@glasgow.ac.uk (S. Turnbull), Helen.Minnis@glasgow.ac.uk (H. Minnis).

Table 1
DSED/RAD: core symptoms.

1. Disinhibited Social Engagement Disorder	2. Reactive Attachment Disorder
Overfriendliness with strangers	Failure to seek comfort
Comfort seeking from strangers	Avoidance of eye contact
Attention seeking	Hypervigilance
Invading social boundaries	Frozen Watchfulness
Personal questions	Unpredictable Reunion response
Minimal checking	
Cuddliness with strangers	

1.2. Historical context

The origins of attachment theory stemmed from [Bowlby's \(1944\)](#) work with young offenders. Fourteen out of 44 teenage 'thieves' were identified as showing a lack of affection and little guilt towards their victims. More than 80% of these "affectionless" children ($n = 12$), had experienced maternal separation of over six months in their first two years. Of the 44 non offending controls only two (five percent) had experienced maternal separation. Bowlby concluded that maternal separation could have an adverse effect on development in terms of emotions, behaviour, social relationships and intellect.

[Follan and Minnis \(2010\)](#) re-interpreted Bowlby's findings by suggesting that the "affectionless" group could be classified as displaying symptoms of an Attachment Disorder: they struggled to establish relationships and showed behaviors that were socially inappropriate. They noticed that many of the "affectionless" children were neglected during separation and suggested that these problems may have arisen from neglect by the parent rather than the stress of the separation. However, both nature and nurture may impact on the development of such problems ([Minnis et al., 2007](#)).

Attachment disorder is a relatively new diagnosis; RAD was first included in the DSM in 1980 ([Potter et al., 2009](#)). In the DSM-IV two subsets of RAD are identified; an inhibited (IRAD) and a disinhibited (DRAD) type. The inhibited child does not initiate suitable social interactions and if approached responds inappropriately. In the disinhibited type the child exhibits an active involvement in close social interactions with numerous people, failing to discriminate between suitable attachment figures. Although two distinct subtypes are outlined, research shows that they can occur together ([Smyke, Dumitrescu, & Zeanah, 2002](#)). Recently the DSM 5 ([APA, 2013](#)) divided the two types into distinct disorders; the inhibited form continues to be known as RAD whereas the disinhibited form was redefined as Disinhibited Social Engagement Disorder (DSED). Research by [Lehmann, Breivik, Heiervang, Havik and Havik \(2016\)](#) found support for the DSM-5 conceptualisation of the disorders as distinct dimensions of child psychopathology. They noted that assessment of both yields information beyond other mental health problems. The criteria within the two disorders remains largely the same as in the DSM-IV and they are discussed in greater detail in the following section. They are also available to view in [Appendix A](#). As mentioned above, for ease of reference the term Attachment Disorders will be used to refer to both RAD and DSED within this paper. In any of the classification systems, the diagnosis can only be made if there has been a history of maltreatment (abuse or neglect).

1.3. Prevalence and symptoms

[Skovgaard \(2010\)](#) estimated the rates of Attachment disorders in 211 Danish one and a half year olds to be 0.9%. [Minnis et al. \(2013\)](#) found the prevalence of Attachment disorders in 1646 six to eight-year-old children in a deprived area of the UK to be 1.4%. More specifically, [Kay, Green and Sharma \(2016\)](#) found the prevalence of Disinhibited Attachment Disorder which is now known as Disinhibited Social Engagement Disorder (DSED) in 60 adopted children (aged 6–11) from UK out of home care to be 49%. Seven-two percent of this sample had suffered maltreatment. They noted the prevalence to be 4% in 26 clinic-referred children with externalizing disorder but no history of maltreatment or disrupted care; and 6% in 55 matched low-risk comparison controls.

Symptoms of RAD include failure to seek comfort, avoiding eye contact, frozen watchfulness, hypervigilance and unpredictable reunion responses. Symptoms of DSED include seeking comfort from strangers, indiscriminate friendliness, demanding and attention seeking behaviour, minimal checking in unfamiliar settings, cuddliness with strangers, asking personal questions of strangers, invading social boundaries ([Minnis et al., 2013](#)). They are also shown in [Table 1](#) below.

Previous research has indicated Attachment Disorders may be more likely in specific environments. Many studies of Attachment Disorders have been conducted with ex-institutionalized children. [Tizard and Rees \(1975\)](#) investigated institutionalized rearing, behavioural problems and disrupted relationships for 26 children aged four to 16 compared with an adopted and a non-institutionalized group. They found that the institutionalized children had slightly higher levels of behaviour problems, clinginess and struggled to form an attachment relationship. In a study of 165 Romanian and 52 UK adoptees (age six), symptoms of severe attachment disorder were noted for six percent of those that had experienced less than six months' parental deprivation and 31% of those that had experienced over two years' parental deprivation ([O'Connor & Rutter, 2000](#)). Failure to discriminate appropriately between adults, showing a lack of wariness with strangers and a lack of physical boundaries was found amongst institutionalized Romanian children ([Zeanah, Smyke, & Dumitrescu, 2002](#)).

Two studies explored Attachment Disorders in children in care ([Millward, Kennedy, Towlson, & Minnis, 2006](#); [Minnis, Everett, Polosi Dunn, & Knapp, 2006](#)). Higher scores on measures of Attachment Disorders were found compared to children

not in care. Minnis, Everett et al. (2006) also found higher symptom scores for Attachment Disorders in children in care compared to the school population.

1.4. Attachment Disorder, maltreatment, mental health and offending

A potential association between maltreatment, Attachment disorders, mental health and offending becomes clear from the literature, although this has not previously been empirically explored: for example, there is no previous research exploring Attachment Disorders among young offenders. Millward et al. (2006) found a high correlation ($r=0.84$) between Attachment Disorders and other mental health problems. Kocovska et al's (2012) study of 34 adopted children with indiscriminate friendliness and early maltreatment found that most displayed symptoms of Attachment disorders, they also had other disorders such as attention deficit hyperactivity disorder (ADHD), post-traumatic stress disorder (PTSD), anxiety disorders and conduct disorder. This cluster of disorders suggests that in such cases what emerges is a complexity of needs as proposed by Gilberg (2010). In his work with children under six he noted that some could be classified as showing "early symptomatic syndromes eliciting neurodevelopmental clinical examination (ESSENCE)". Gilberg (2010) suggested that a child with an Attachment Disorder may also display the symptoms of ADHD and depression, for example, and importantly these should not be looked upon in isolation.

Minnis (2013) acknowledges this concept of overlapping neurodevelopmental difficulties when introducing the idea of maltreatment associated psychiatric problems (MAPP), reflecting studies which demonstrate that indiscriminately friendly children may also have other disorders such as ADHD and Conduct Disorder. An association for boys between maltreatment, harsh parenting and conduct disorder was noted by Rutter, Giller and Hagell (1998). Here it was suggested that many boys who experienced harsh, physically or verbally abusive punitive parenting could develop conduct disorder and violent criminal behaviour in later years.

Other studies have also identified a strong association between maltreatment and later criminal behaviour (Smith, Thornberry, & Ireland, 2004; Trentacosta & Shaw, 2008; Widom & Maxfield, 2001). Ryan, Williams and Courtney (2013) confirmed this association and reported the level of maltreatment to be 30% amongst a sample of young offenders. Further studies expanded this association relative to the specific type of offence (Lansford et al., 2007; Topitzes, Mersky, & Reynolds, 2012). In the first case an association between maltreatment and adolescent violent offences was noted and in the second a link between maltreatment and both violent and nonviolent offences in adolescence was found. This research leads on to an emerging profile of young offenders. A survey of 300 offenders, aged 13–18, found that a third had experienced foster care, 36% had educational needs, 48% had difficulties with social relationships and 31% had mental health problems (Chitsabesan et al., 2006).

Given the link between maltreatment and young offending and the fact that Attachment Disorders are the only diagnoses specifically related to a history of maltreatment, the hypothesis was that a group of young offenders might have a higher rates of Attachment Disorders. This study will, for the first time, examine the rates of Attachment Disorders within this population and consider factors that may be associated with higher levels of Attachment Disorder symptoms within this group. It is recognised that the term "young offender" is a simplistic definition however, after much discussion, a commonly used clinical definition was employed, i.e. young people who have been involved in criminal activity and are known to youth offending services.

Hypotheses and Research Questions. The hypothesis is that there will be high rates of Attachment Disorders among young offenders and that Attachment Disorder symptoms will be associated with other mental health problems. Research Questions are:

1. What is the rate of Attachment Disorder diagnoses among young offenders?
2. Is there a correlation between Attachment Disorder symptoms and other mental health problems?

2. Methods

2.1. Design

A cross-sectional study, which involves the analysis of data collected from a population at one specific point in time, was undertaken to examine the rate of Attachment Disorders among young offenders. A correlational design was used to address hypotheses including the association between Attachment Disorders and other mental health problems which will form the basis of the main analysis. The aim of the study design was to identify and target the entire eligible population.

2.2. Participants

The study aimed to identify and include all young people and their caregivers who were receiving Intensive Youth Justice Services within a large inner city area. Intensive Youth Justice Services in this area provide community based support for high risk young people aged between 12 and 17. There are separate gender-sensitive services for males and females. These young people may present with a range of risks including offending, mental health, substance use, absconding, and sexual

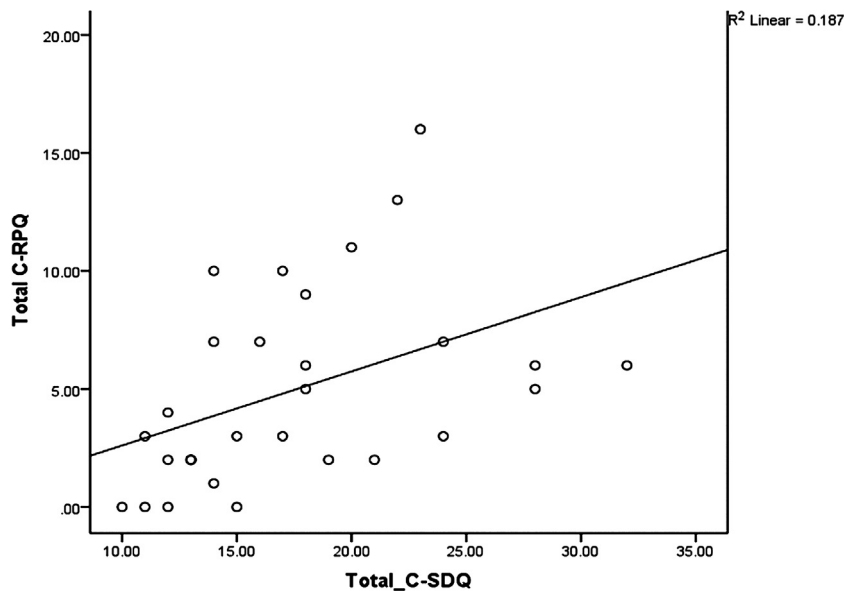


Fig. 1. Flow chart of participant recruitment.

exploitation, that mean they pose a significant risk of harm to themselves as well as others. All but two of the participants had a definite history of offending. This means that two of the study participants had reported offences but there was uncertainty as they had not yet been convicted. In determining whether a young person had a history of offending, allegations as well as convictions were taken into account. In this study a carer was defined as the person with main primary care giving responsibility for the individual or in the absence of this, someone who knows them well e.g. a relative, key worker, support worker. Inclusion criteria consisted of contact with the aforementioned services, age 12–17 and fluent in English. The only exclusion criterion was impaired capacity to consent as judged by the referring clinician. Participants were recruited over an eight-month period.

Overall 11 individuals were deemed unsuitable to approach (see Fig. 1 for reasons). Of 34 approached, one gave consent but their carer was not contactable, four did not want to take part and 29 participated (85% of those approached).

2.3. Measures (available on request)

Strengths and difficulties questionnaire (SDQ; Goodman, Meltzer, & Bailey, 1998). The SDQ assesses child psychiatric symptoms across five subscales; prosocial behaviour, relationships with peers, hyperactivity, conduct and emotions. It can be completed in ten minutes and contains 25 items, for example, 'I worry a lot', rated as *not true*, *somewhat true* or *certainly true*. The SDQ has strong validity, test-retest reliability and internal consistency (Goodman, 2001). It has been well validated against other screening instruments (Goodman & Scott, 1999) and against psychiatric diagnosis (Goodman, Ford, Simmons, Gatward, & Meltzer, 2003). Self, parent/carer and teacher-report versions were utilized. The Total Difficulties Score can range from 0 to 40 and is created by summing the scores from all the scales except the prosocial subscale. Based on SDQ ratings, individuals are categorized as *unlikely*, *possible* or *probable* in terms of each subscale and overall mental health problems.

Relationship Problems Questionnaire (RPQ; Minnis et al., 2007). This explores Attachment Disorder symptoms. It is a well validated ten item questionnaire, with four graded responses from *exactly like my child* through to *not at all like my child* with two moderate measures in between. The scale has an 0.85 internal consistency (Minnis et al., 2007) and it has been well validated against attachment disorder diagnosis in epidemiological research (Minnis et al., 2013). Scores range from 0 to 30. The measure takes five minutes to complete. A parent/carer and teacher version was used.

The Child and Adolescent Psychiatric Assessment, Reactive Attachment Disorder module (CAPA RAD; Minnis et al., 2009) is a semi-structured interview for parents/carers, used to assess RAD symptoms. It was based upon the well validated Child and Adolescent Psychiatric Assessment (CAPA) semi-structured parent report interview for child psychopathology (Angold & Costello, 2000) and has been used in previous epidemiological research (Minnis et al., 2013). For each item, one of a small range of recommended stem questions is asked and if definitely or possibly present, the carer is asked to give an example of the behaviour. Based on this, the item is rated *present* or *not present*. As this is the first study to use the CAPA-RAD in an adolescent population, slight modifications were made. In collaboration with the lead author of the CAPA-RAD and after consideration of new and as yet unpublished data on the manifestations of inhibited symptoms in older children and adolescents, two new items were added to address RAD. Therefore, it consisted of 31 items.

2.4. History of Maltreatment Checklist (HOM; Kocovska et al., 2012)

This is a six item checklist examining areas of maltreatment such as neglect and abuse. It also addresses the number of substitute care placements the child has had and asks about any existing diagnoses. Generally, there are four response/scoring options; *yes*, *no*, *probable*, and *unknown*. This checklist is used to gain information in a systematic fashion. It is completed by the child's key worker and checked against the files.

2.5. Observational schedule for Reactive Attachment Disorder (Youth Version)

The Observational Checklist for Reactive Attachment Disorder (McLaughlin, Espie, & Minnis, 2010) has good internal consistency (Cronbach $\alpha = 0.75$) and good specificity but modest sensitivity in identifying children with Attachment Disorders (Minnis et al., 2009) therefore it is used in addition to parent-report diagnostic measures. It is normally used when observing children within the clinical waiting room and was modified for use with this age group. In consultation with one of the authors, and after consideration of new and as yet unpublished data on the manifestations of Attachment Disorder symptoms in older children and adolescents, ten items were deleted and six were added to better describe symptoms in this age range. This was used alongside the other measures when making a diagnosis of an Attachment Disorder.

In childhood, the carer and teacher's report is usually considered sufficient to inform a psychiatric diagnosis. However, because Attachment Disorders in adolescence are poorly researched, it was considered useful to incorporate observations from this schedule. As such this was an exploratory part of the study.

2.6. Procedures

The project received ethical approval from the NHS West of Scotland Research Ethics Committee, NHS Research and Development and Glasgow City Council Social Work Services Performance and Research Team.

Agreement was sought by the multi-agency care team regarding whether the young person could be approached to take part in the research. A decision was made about who would be best placed to approach them, which in practice was either the Clinical Psychologist working within Intensive Youth Justice Services or an Intensive Services worker (e.g. a social worker or key worker). The nominated individual then provided the young person and their carer, if present, with a study information sheet and a consent form. There was a participant version and a carer's version. The young person was also asked if they wanted to meet the researcher to find out more about the study. It was made clear that consenting to take part in the study was the young person's decision and would in no way affect their care plan.

Full consent was established when signed forms were received. Details regarding who completed each questionnaire are available on request. In terms of the young person's SDQ, seven already had an up-to-date version (less than six months old), 12 needed to be updated and a further ten had never completed one and needed to do so. For one individual it was not possible to get an up-to-date version and as such their old version was used. The Observational Schedule for RAD and the HOM checklist were completed for all 29 participants.

The researcher made contact with the nominated carer and provided information if not already given. Again full consent for their participation was established when signed consent forms were returned. The researcher met with each carer and completed the CAPA-RAD interview, the carer SDQ and RPQ. This took approximately one hour. All 29 carers were key workers and/or residential care staff.

Twenty teachers were identified. The remaining nine young people had not had contact with education for at least a year. The researcher either met with the teacher or sent out an information sheet and consent form along with the teacher's SDQ and RPQ for completion. These measures took approximately ten minutes to complete.

Two clinicians (HM, a Consultant Child and Adolescent Psychiatrist and K.M a Trainee Clinical Psychologist) reviewed the data from the RPQ, CAPA-RAD, the Observational Schedule for RAD, and the HOM Checklist to provide a diagnosis of an Attachment Disorder, borderline Attachment Disorder or no Attachment Disorder based on DSM-5 criteria. The impact of any other existing diagnoses on an Attachment Disorder was taken into account when making a diagnosis of an Attachment Disorder. Research indicates good to excellent reliability of team best-estimate diagnoses of both axis I and II disorders irrespective of whether diagnoses were based on direct interviews plus informant or on informant data alone. Such results were consistent across time (Klein et al., 1994).

All data were managed and analysed using the Statistical Package for Social Sciences (SPSS) Version 19. Imputed means were calculated and entered for missing items on the teacher's measures (TRPQ and TSDQ), where missing data amounted to no more than 20% (YouthinMind website, n.d). This involved calculating a mean based on the responses provided by each teacher. Seven individuals had scores imputed on the TSDQ and six were imputed on the TRPQ.

Cohen's (1988) guidelines were used to interpret the correlation: small ranged between 0.10 and 0.29, medium between 0.30 and 0.49 and large between 0.50 and 1.0. Categorical data is presented as numbers and percentages. Depending on the distribution of the data, continuous variables are presented using means and standard deviations or medians and interquartile ranges. Correlations are provided using Spearman's rank order correlation depending on the data.

Table 2
History of maltreatment category number and percentage and number of placement moves.

	Yes	No	Probable	Unknown
Emotional neglect	19 (65%)	4 (14%)	6 (21%)	0
Physical neglect	11 (38%)	11 (38%)	7 (24%)	0
Emotional abuse	10 (34%)	15 (52%)	4 (14%)	0
Physical abuse	12 (41%)	11 (38%)	6 (21%)	0
Sexual abuse	7 (24%)	15 (52%)	5 (17%)	2 (7%)
Witnessed domestic violence	18 (62%)	9 (31%)	2 (7%)	0
No. of placement moves	Range – 0–12 (Mdn = 2, Interquartile range 1–5)			

Table 3
Number and percentage of participants with and without an Attachment Disorder.

	Number of individuals	Percentage
Total Attachment Disorder/Borderline	15	52%
RAD	3	10%
DSED	6	21%
Mixed	3	10%
Borderline	3	10%
No Attachment Disorder	14	48%

Table 4
Correlations for the C-SDQ and C-RPQ.

Total C-SDQ and	Total CRPQ	$r_s = 0.60, p = 0.001$
	RAD	$r_s = 0.61, p < 0.001$
	DSED	$r_s = 0.30, p = 0.118$
Total C-RPQ and	Hyperactivity	$r_s = 0.50, p = 0.005$
	Peer problems	$r_s = 0.47, p = 0.010$
	Emotional symptoms	$r_s = 0.37, p = 0.051$
	Conduct problems	$r_s = 0.19, p = 0.326$

3. Results

Preliminary analysis indicated that the data was normally distributed for the carer and teacher SDQ; however, it was positively skewed for the carer and teacher RPQ and therefore violated the assumptions required for parametric tests. As such, in all analysis non-parametric tests were selected. The majority of the statistics are descriptive as there is no way of controlling for error rate and power.

3.1. Demographics

Twenty-nine individuals receiving Intensive Services, 29 of their carers and 20 teachers participated. The young people were aged between 12 years 10 months and 17 years 11 months ($M = 16.2, SD = 1.3$), ten female and 19 male. Table 2 details participant characteristics recorded by the HOM Checklist such as maltreatment background and number of placement moves.

Overall 86% ($n = 25$) of the study participants had experienced at least one form of maltreatment and a further ten percent ($n = 3$) had probably experienced a minimum of one type of maltreatment. Probable refers to abuse that was thought to have occurred due to circumstances but without proof.

Hypothesis 1 (There will be high rates of Attachment Disorder diagnoses among young offenders). Fifty-two percent of the study participants received an Attachment Disorder or Borderline Attachment Disorder diagnosis. Specifically, ten percent had RAD, 21% DSED, ten percent a mixed presentation and ten percent borderline Attachment Disorder. Forty-eight percent received no diagnosis (see Table 3). This finding supports the hypothesis that there will be high rates of Attachment Disorders diagnosed among young offenders.

Hypothesis 2 (There will be a relationship between Attachment Disorder symptom scores and other mental health problems). The relationship between Total Attachment Disorder symptoms (as measured by the Carer RPQ; C-RPQ) and other mental health problems (as measured by the Carer SDQ; C-SDQ) were investigated using a Spearman's rank order correlation (see Table 4).

3.2. Total Attachment Disorder symptoms and C- SDQ total

There was a strong positive correlation found between Attachment Disorder scores and mental health problems, ($r_s = 0.60$) with higher levels of Total Attachment Disorder Scores associated with higher scores for other mental health problems (SDQ Total Difficulties Scores) (see Fig. 2).

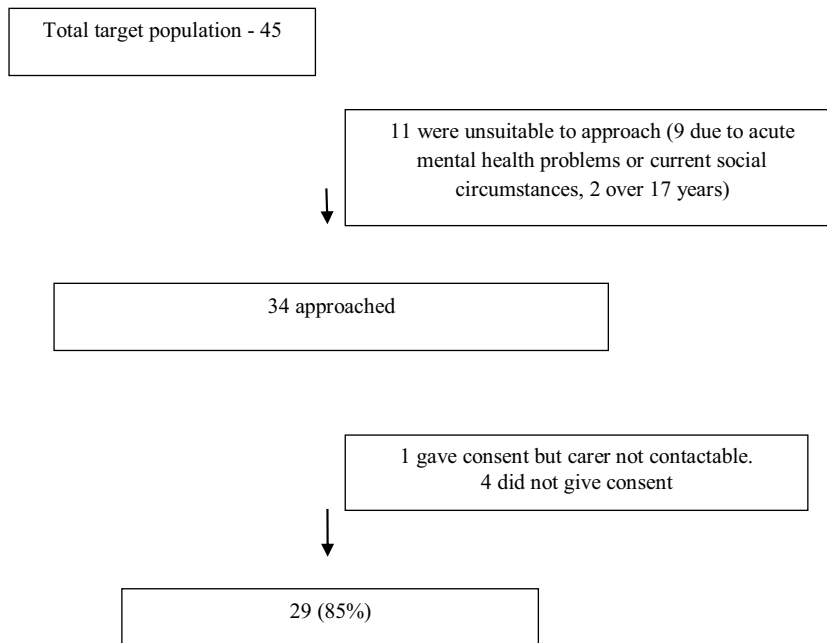


Fig. 2. Total Attachment Disorder Scores and C-SDQ Total Difficulties Scores.

3.3. Total Attachment Disorder and C-SDQ subscales

Analysis then focused on correlations between Total Attachment Disorder Scores and the individual mental health subscales of the C-SDQ. There was a strong positive correlation found between Total Attachment Disorder Scores and hyperactivity, ($r_s = 0.50$). There was a medium correlation found between Total Attachment Disorder Scores and peer relationship problems ($r_s = 0.47$).

A medium (non-significant) correlation was noted between Total Attachment Disorder Scores and emotional symptoms ($r_s = 0.37$). A small (non-significant) correlation was noted between Total Attachment Disorder scores and conduct problems ($r_s = 0.19$) and Total Attachment Disorder scores and prosocial behaviour ($r_s = -0.25$).

3.4. Teacher's measures (TRPQ and TSDQ)

A sensitivity analysis (where findings were compared before and after imputation) was conducted for correlations between Total Attachment Disorder Scores and symptoms of other mental health problems based on these measures. Generally, findings were similar before and after imputation. Results of the reported correlations on teacher measures were based on 19 study participants.

A medium (non-significant) correlation was noted between Total Attachment Disorder Scores (TRPQ) and Total Difficulties Scores on the TSDQ ($r_s = 0.45$). A strong correlation was also found between Total Attachment Disorder Scores and conduct ($r_s = 0.54$) and a medium correlation between Total Attachment Disorder Scores and hyperactivity ($r_s = 0.46$). The only correlation that was significant as reported by both carer and teacher measures was that of Total Attachment Disorder Scores and hyperactivity.

3.5. Profile of other mental health difficulties and Attachment Disorders

Results for other mental health problems based on the C-SDQ were also described in terms of individuals with and without an Attachment Disorder diagnoses. The 'with Attachment Disorder' group includes those who have been classed as Borderline (Table 5). Descriptive statistics were seen to be the most appropriate means of presenting the data.

There is a higher percentage of those with an Attachment Disorder that have possible and probable other mental health problems, emotional difficulties (60% vs. 36%), conduct problems (100% vs. 71%), hyperactivity (67% vs. 21%), and peer problems (87% vs. 71%).

Results from the three versions of the SDQ (Self, Carer, Teacher) can be seen in Appendix B. On overall Total Difficulties Scores, young people under-reported difficulties compared to carers and teachers, and carers and teachers were comparable. Young people under-reported in comparison to carers and teachers on conduct, peer problems and prosocial behaviour. Young people were comparable to carers on their reporting of hyperactivity and teachers reported less. Young people were comparable to teachers on their reporting of emotional difficulties and carers reported more problems in this area.

Table 5
Mental health problems based on the C-SDQ described in terms of individuals with and without an Attachment Disorder.

	With Attachment Disorder/Borderline			Without Attachment Disorder		
	Unlikely	Possible	Probable	Unlikely	Possible	Probable
Total	2 (13%)	3 (20%)	10 (67%)	6 (43%)	2 (14%)	6 (43%)
Emotional	6 (40%)	4 (27%)	5 (33%)	9 (64%)	1 (7%)	4 (29%)
Conduct	0	4 (27%)	11 (73%)	4 (29%)	0	10 (71%)
Hyperactivity	5 (33%)	3 (20%)	7 (47%)	11 (79%)	1 (7%)	2 (14%)
Peer problems	2 (13%)	3 (20%)	10 (67%)	4 (29%)	2 (14%)	8 (57%)
Prosocial	7 (50%)	3 (21%)	4 (29%)	6 (43%)	6 (43%)	2 (14%)

4. Discussion

A high rate of Attachment Disorder or borderline Attachment Disorder (52%) was found in this population who has a high incidence of offending behaviour. This greatly exceeds what previous research estimated the rates to be in one and a half year olds (0.9%; Skovgaard, 2010) and in a materially deprived school aged population (1.4%; Minnis et al., 2013). Specifically considering DSED, the rate of 21% in this study is less than what was found by Kay, Green and Sharma (42%, 2016) in a sample of UK middle childhood adopted children. However, it is worth noting that there is no overlap in the participant's age across studies and thus they are not comparable. Evidence was found to support RAD and DSED occurring together, as previously outlined by Smyke et al. (2002).

Of the study participants, 86% had experienced at least one form of maltreatment and a further ten percent was classed as probably experiencing maltreatment. This level of maltreatment is higher than the 30% found by Ryan et al. (2013) in young offenders. This highlights the need to have an awareness of maltreatment and its potential impact when working with this client group.

According to carers a strong link between mental health problems and Attachment Disorders was noted. This is in line with Millward et al. (2006). However, only a moderate association was noted between Total Attachment Disorder Scores and Total Difficulties Scores as reported by teachers. The only significant association shared by carer and teacher measures was that of Attachment Disorder and hyperactivity.

On overall Total Difficulties Scores on the SDQ, young people under reported difficulties compared to carers and teachers, and the carers and teachers were generally comparable. This may suggest that the young people may be less insightful about their situation than the caregivers and teachers. This variety of perspectives highlights the relevance of using multiple informants in research and in the clinical assessment of Attachment Disorders.

This research returns to a study of young people similar to those studied in Bowlby's original work (1944). As previously discussed he suggested that these young offenders experienced early adversity which may have impacted on their social relationships. This study also highlights this link, with peer problems being reported by most carers. Following on from Bowlby, Follan and Minnis (2010) reviewed the young offender's records and found that most had experienced maltreatment and neglect. This research is consistent with the findings from Bowlby's historic case series as it was found that the overwhelming majority of this young offender's sample had been maltreated and over half displayed Attachment Disorder symptoms. As such, previous research drew attention to the potential impact of separation on future relationships however this study helped to clarify that it may be the maltreatment or neglect as suggested by Follan and Minnis that is imperative rather than the separation alone.

Such findings have both clinical and theoretical implications. The results identify needs within a high risk/vulnerable population. Drawing attention to this may lead to education for clinical staff and carers which may result in a greater understanding of the young person, and the potential for improvements in care. Highlighting complex presentations also underlines the need for a multidisciplinary approach to assessment and treatment with a focus on a variety of symptoms which may be associated with early exposure to adversity. This is essential in practice as those identified with an Attachment Disorder are more likely to also have other disorders. Where the simplistic term "young offender" is used, offending/risk behaviour may become the main focus with a consequential lack of consideration afforded to neurodevelopmental or psychiatric profiles. As risk can be the main focus in some services, these research findings may reinforce the need to remain aware of maltreatment at all times. As the research is exploratory in nature, it also lays the foundations for future studies to further examine the link between Attachment Disorders and other mental health problems. It may also be worthwhile in future, to assess types of Attachment Disorder and specific number and nature of offences although much larger participant numbers would be necessary. Beyond this it would be useful to examine how Attachment Disorders are assessed and managed within services.

5. Limitations

The cross-sectional nature of the study may be seen as a limitation as it does not allow for any assertions about the direction of causality for associations between Attachment Disorders and other factors. As some of the target population was lost, an element of bias may have been introduced. For example, the young people who workers thought were too

unwell or chaotic to be involved in the study may well have been more likely to have an Attachment Disorder, so the finding on rates may be an under-estimate. However, a relatively high participation rate in this study was observed.

A further limitation relates to no parents participating in the study. Carer measures were completed by residential staff/key workers who had known the young people for a minimum of one month. Having parents as informants may have resulted in differing reports. The diagnostic criteria requires onset of an Attachment Disorder before the age of five. The best source of information on the child's history could have been the parents rather than employees working in an environment where frequent changes in caregivers are found.

The study is not claiming to address why there is a high rate of attachment disorders in this group and this may be seen as a limitation. Factors such as cognitive deficits and their potential influence on presentation have not been explored and as such future studies could take account of them. Alongside this, although it is a total population study, it may be worthwhile including more sites in other cities to compare findings and consider the generalisability of the results.

6. Conclusion

Overall there was high rates of Attachment Disorders found within a population of high risk young offenders attending specialist services. Attachment Disorders were also found to be strongly associated with other mental health problems. Further research is warranted to examine the generalizability to other groups of young offenders. It might also be interesting to explore associations between an Attachment Disorder and other variables such as the type, prevalence and severity of offending behaviour.

Acknowledgements

This research was partly funded by NHS Education Scotland. We would like to thank Dr Aileen Blower for comments helpful to the design of this study.

References

- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed. revised). Washington, DC: American Psychiatric Association.
- Angold, A., & Costello, E. J. (2000). The Child and Adolescent Psychiatric Assessment (CAPA). *Journal of the American Academy of Child & Adolescent Psychiatry*, 39(1), 39–48.
- Bowlby, J. (1944). Forty-four juvenile thieves: Their characters and home-life (II). *International Journal of Psycho-Analysis*, 25, 107–128.
- Chitsabesan, P., Kroll, L., Bailey, S., Kenning, C., Sneider, S., MacDonald, W., et al. (2006). Mental health needs of young offenders in custody and in the community. *British Journal of Psychiatry*, 188, 534–540.
- Cohen, J. (1988). *Statistical power analysis for the behavioural sciences* (2nd ed.). Hillsdale: Lawrence Erlbaum.
- Follan, M., & Minnis, H. (2010). Forty-four juvenile thieves revisited: from bowlby to reactive attachment disorder. *Child: Care, Health & Development*, 36(5), 639–645.
- Gilberg, C. (2010). The ESSENCE in child psychiatry: Early symptomatic syndromes eliciting neurodevelopmental clinical examinations. *Research in Developmental Disabilities*, 31(6), 1543–1551.
- Goodman, R., & Scott, S. (1999). Comparing the Strengths and Difficulties questionnaire and the Child Behaviour Checklist: Is small beautiful? *Journal of Abnormal Child Psychology*, 27, 17–24.
- Goodman, R., Meltzer, H., & Bailey, V. (1998). The Strengths and Difficulties Questionnaire: A pilot study on the validity of the self-report version. *European Child & Adolescent Psychiatry*, 7(3), 125–130.
- Goodman, R., Ford, T., Simmons, H., Gatward, R., & Meltzer, H. (2003). Using the Strengths and Difficulties Questionnaire (SDQ) to screen for child psychiatric disorders in a community sample. *International Review of Psychiatry*, 15(1–2), 166–172.
- Goodman, R. (2001). Psychometric properties of the strengths and difficulties questionnaire (SDQ). *Journal of the American Academy of Child & Adolescent Psychiatry*, 40(11), 1337–1345.
- Kay, C., Green, J., & Sharma, K. (2016). Disinhibited attachment disorder in UK adopted children during middle childhood: Prevalence, validity and possible developmental origin. *Journal of Abnormal Child Psychology*, 1–12.
- Klein, D. N., Ouimette, P. C., Kelly, H. S., et al. (1994). Test-retest reliability of team consensus best-estimate diagnoses of axis I and II disorders in a family study. *American Journal of Psychiatry*, 151, 1043–1047.
- Kocovska, E., Puckering, C., Follan, M., Smillie, M., Gorski, C., Barnes, J., et al. (2012). Neurodevelopmental problems in maltreated children referred with indiscriminate friendliness. *Research in Developmental Disabilities*, 33(5), 1560–1565.
- Lansford, J. E., Miller-Johnson, S., Berlin, L. J., Dodge, K. A., Bates, J. E., & Pettit, G. S. (2007). Early physical abuse and later violent delinquency: A prospective longitudinal study. *Child Maltreatment*, 12(3), 233–245.
- Lehmann, S., Breivik, K., Heiervang, E. R., Havik, T., & Havik, O. E. (2016). Reactive attachment disorder and disinhibited social engagement disorder in school-aged foster children – a confirmatory approach to dimensional measures. *Journal of Abnormal Child Psychology*, 44(3), 445–457.
- McLaughlin, A., Espie, C., & Minnis, H. (2010). Development of a brief waiting room observation for behaviours typical of reactive attachment disorder. *Child and Adolescent Mental Health*, 15, 73–79.
- Millward, R., Kennedy, E., Towilson, K., & Minnis, H. (2006). Reactive attachment disorder in look-after children. *Emotional and Behavioural Difficulties*, 11(4), 273–279.
- Minnis, H., Reekie, J., Young, D., O'Connor, T., Ronald, A., & Gray, A. (2007). Genetic, environmental and gender influences on attachment disorder behaviors. *British Journal of Psychiatry*, 190, 495.
- Minnis, H., Green, J., O'Connor, T. G., Liew, A., Glaser, D., Taylor, E., et al. (2009). An exploratory study of the association between reactive attachment disorder and attachment narratives in early school-age children. *Journal of Child Psychology & Psychiatry & Allied Disciplines*, 50(8), 931–942.
- Minnis, H., Macmillan, S., Pritchett, R., Young, D., Wallace, B., Butcher, J., et al. (2013). Prevalence of reactive attachment disorder in a deprived population. *British Journal of Psychiatry*, 202(5), 342–346.
- Minnis, H. (2013). Maltreatment-associated psychiatric problems: An example of environmentally triggered ESSENCE? *Scientific World Journal*, 1–5.
- Minnis, H., Everett, K., Pelosi, A. J., Dunn, J., & Knapp, M. (2006). Children in foster care: Mental health, service use and costs. *European Child & Adolescent Psychiatry*, 15(2), 63–70.

- O'Connor, T. G., & Rutter, M. (2000). Attachment disorder behaviour following early severe deprivation: Extension and longitudinal follow-up. English and Romanian Adoptees Study Team. *Journal of the American Academy of Child & Adolescent Psychiatry*, 39(6), 703–712.
- Potter, D., Chevy, C., Amaya-Jackson, L., O'Donnell, K., & Murphy Zeanah, R. C. (2009). Reactive Attachment Disorder (RAD): Appropriate and Inappropriate Application of the Reactive Attachment Disorder Diagnosis on an Age Continuum from Birth through Age 18. In *Clinical Guidelines Series*. Center for Child & Family Health.
- Rutter, M., Giller, H., & Hagell, A. (1998). *Antisocial behaviour by young people*. Cambridge: Cambridge University Press.
- Ryan, J. P., Williams, A. B., & Courtney, M. E. (2013). Adolescent neglect, juvenile delinquency and the risk of recidivism. *Journal of Youth & Adolescence*, 42(3), 454–465.
- Skovgaard, A. M. (2010). Mental health problems and psychopathology in infancy and early childhood. An epidemiological study. *Danish Medical Bulletin*, 57, 193.
- Smith, C. A., Thornberry, T. P., & Ireland, T. O. (2004). Adolescent maltreatment and its impact: Timing matters. *The Prevention Researcher*, 11, 7–11.
- Smyke, A. T., Dumitrescu, A., & Zeanah, C. H. (2002). Attachment disturbances in young children I: The continuum of caretaking casualty. *Journal of American Academy of Child & Adolescent Psychiatry*, 41, 972–982.
- Tizard, B., & Rees, J. (1975). The effect of early institutional rearing on the behavioural problems and affectional relationships of four year old children. *Journal of Child Psychology and Psychiatry*, 16, 61–73.
- Topitzes, J., Mersky, J. P., & Reynolds, A. J. (2012). From child maltreatment to violent offending: An examination of mixed-gender and gender-specific models? *Journal of Interpersonal Violence*, 27(12), 2322–2347.
- Trentacosta, C. J., & Shaw, D. S. (2008). Maternal predictors of rejecting parenting and early adolescent antisocial behaviour. *Journal of Abnormal Child Psychology*, 36, 247–259.
- Widom, C. S., & Maxfield, M. G. (2001). *An update on the 'cycle of violence'*. Washington, DC: National Institute of Justice.
- Youthmind (2014, May 07). Retrieved from <http://www.sdqinfo.org/py/sdqinfo/c0.py>.
- Zeanah, C. H., Smyke, A. T., & Dumitrescu, A. (2002). Attachment disturbances in young children. II: Indiscriminate behaviour and institutional care. *Journal of the American Academy of Child & Adolescent Psychiatry*, 41(8), 983–989.

Appendix A. – DSM 5 criteria

DSM-5 Criteria for Reactive Attachment Disorder (RAD)

The DSM-5 gives the following criteria for Reactive Attachment Disorder:

- (A) A consistent pattern of inhibited, emotionally withdrawn behaviour toward adult caregivers, manifested by both of the following:
- The child rarely or minimally seeks comfort when distressed.
 - The child rarely or minimally responds to comfort when distressed.
- (B) A persistent social or emotional disturbance characterized by at least two of the following:
- Minimal social and emotional responsiveness to others.
 - Limited positive affect.
 - Episodes of unexplained irritability, sadness, or fearfulness that are evident even during nonthreatening interactions with adult caregivers.
- (C) The child has experienced a pattern of extremes of insufficient care as evidenced by at least one of the following:
- Social neglect or deprivation in the form of persistent lack of having basic emotional needs for comfort, stimulation, and affection met by caring adults.
 - Repeated changes of primary caregivers that limit opportunities to form stable attachments (e.g., frequent changes in foster care).
 - Rearing in unusual settings that severely limit opportunities to form selective attachments (e.g., institutions with high child to caregiver ratios).
- (D) The care in Criterion (C) is presumed to be responsible for the disturbed behaviour in Criterion (A) e.g., the disturbances in Criterion (A) began following the lack of adequate care in Criterion (C).
- (E) The criteria are not met for autism spectrum disorder.
- (F) The disturbance is evident before age 5 years.
- (G) The child has a developmental age of at least nine months.

Specify If Persistent. The disorder has been present for more than 12 months.

Specify Current Severity. Reactive Attachment Disorder is specified as severe when a child exhibits all symptoms of the disorder, with each symptom manifesting at relatively high levels.

DSM-5 Criteria for Disinhibited Social Engagement Disorder

The DSM-5 gives the following criteria for Disinhibited Social Engagement Disorder:

A A pattern of behavior in which a child actively approaches and interacts with unfamiliar adults and exhibits at least two of the following:

Reduced or absent reticence in approaching and interacting with unfamiliar adults.

Overly familiar verbal or physical behavior (that is not consistent with culturally sanctioned and with age-appropriate social boundaries).

Diminished or absent checking back with adult caregiver after venturing away, even in unfamiliar settings.

Willingness to go off with an unfamiliar adult with little or no hesitation.

B The behaviors in Criterion A are not limited to impulsivity (as in Attention-Deficit/Hyperactivity Disorder) but include socially disinhibited behavior.

C The child has exhibited a pattern of extremes of insufficient care as evidenced by at least one of the following:

Social neglect or deprivation in the form of persistent lack of having basic emotional needs for comfort, stimulation and affection met by caregiving adults.

Repeated changes of primary caregivers that limit ability to form stable attachments (e.g., frequent changes in foster care).

Rearing in unusual settings that severely limit opportunities to form selective attachments (e.g., institutions with high child to caregiver ratios).

D The care in Criterion C is presumed to be responsible for the disturbed behavior in Criterion A (e.g., the disturbances in Criterion A began following the pathogenic care in Criterion C).

E The child has a developmental age of at least nine months.

Specify if Persistent: The disorder has been present for more than 12 months.

Specify current severity: Disinhibited Social Engagement Disorder is specified as severe when a child exhibits all symptoms of the disorder, with each symptom manifesting at relatively high levels.

Appendix B. – Three (Parent, Self and Teacher) SDQ Scores

Total	Unlikely	Possible	Probable	Possible and probable percentages summed
Self	14 (48%)	9 (31%)	6 (21%)	52%
Parent	8 (28%)	5 (17%)	16 (55%)	72%
Teacher (Imputed)	4 (21%)	2 (11%)	13 (68%)	79%
Emotional				
Self	22 (76%)	4 (14%)	3 (10%)	24%
Parent	15 (52%)	5 (17%)	9 (31%)	48%
Teacher (Imputed)	14 (74%)	3 (16%)	2 (11%)	27%
Conduct				
Self	12 (41%)	5 (17%)	12 (41%)	58%
Parent	4 (14%)	4 (14%)	21 (72%)	86%
Teacher (Imputed)	4 (21%)	0	15 (79%)	79%
Hyperactivity				
Self	11 (38%)	4 (14%)	14 (48%)	62%
Parent	9 (31%)	5 (17%)	15 (52%)	69%
Teacher (Imputed)	10 (53%)	3 (16%)	6 (32%)	48%
Peer problems				
Self	19 (66%)	7 (24%)	3 (10%)	34%
Parent	6 (21%)	5 (17%)	18 (62%)	79%
Teacher (Imputed)	8 (42%)	2 (11%)	9 (47%)	58%
Prosocial				
Self	24 (83%)	2 (7%)	3 (10%)	17%
Parent	13 (46%)	9 (32%)	6 (21%)	53%
Teacher (Imputed)	4 (22%)	5 (28%)	9 (50%)	78%