Title: Empathy deficits and adolescent sexual offending: A systematic review of the evidence base

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ABSTRACT

Although empathy deficits are commonly assumed to contribute to adolescent sex offending, no systematic review of the evidence base has been undertaken. To rectify this omission, this review examines whether current evidence supports the existence of a relationship between empathy and adolescent sexual offending. A systematic search of the evidence base found sixteen relevant empirical studies, which provided evidence that was inconclusive or subject to methodological limitations. The review suggests that further systematic and methodologically-sound research is required to determine the extent and nature of the relationship between empathy and adolescent sex offending, that any relationship between the two is unlikely to be straightforward, and that explanations of the mechanisms involved should be integrated into wider multifactorial explanations for this behaviour.

Keywords: Adolescent sexual offending

Juvenile sexual offending

Empathy

1. Introduction

Adolescent[1] sexual offending is a significant problem in society, with young people aged under 18 accounting for nearly one in seven of all arrests for rape and other sex offences in the United States (Federal Bureau of Investigation, 2014), and for up to a third of the most serious sexual offences in the United Kingdom (Ministry of Justice, 2013). To inform the effective assessment and treatment of ASOs, a wide range of potential risk factors have been explored (Seto & Lalumière, 2010), including the construct of empathy.

It has traditionally been assumed that possession of empathy encourages prosocial behaviour and, conversely, that a lack of empathy encourages antisocial behaviour (e.g., Miller & Eisenberg, 1988). Similarly, theories of adult sexual offending tend to assume that empathy deficits are a necessary (if not sufficient) precursor to sexual offending (Barnett & Mann, 2017), perhaps because a lack of empathy disinhibits sexual arousal (W. L. Marshall & Barbaree, 1990) or reduces motivation to desist from offending (Pithers, 1999). Reflecting this, many published risk assessment guidelines state that a lack of empathy is evidence of heightened risk of sex offending (Worling & Långström, 2006) and interventions to increase empathy are included in most sex offender treatment programmes (Day, Casey, & Gerace, 2010; Mann & Barnett, 2012).

1.1 How empathy deficits may contribute to sexual offending

Unfortunately, there is limited direct evidence that an empathetic response inhibits sexual offending (Ward & Durrant, 2014) and the extent and exact nature of any relationship between empathy deficits and adult sexual offending remains unclear at present (Barnett & Mann, 2017). Identifying links between empathy deficits and sexual offending has been

[1] Although, strictly speaking, they refer to different identifying features of offenders, the terms 'adolescent' and 'juvenile' are often used interchangeably in the literature (Barbaree and Marshall, 2006). This paper will use the term 'adolescent sex offender' (abbreviated to 'ASO') throughout, except when describing the alternative terms used by different studies. Two other abbreviations are used: 'NO' for 'non offender' (i.e., an adolescent with no known offending history of any kind) and NSO for 'non-sex offender' (i.e., an adolescent with an offending history that does not include sexual offences).

complicated by an on-going debate amongst theorists about how the construct of empathy should be defined and operationalised. There are two key aspects to this debate. First, there has been no firm consensus about the experiences and processes that constitute the concept of 'empathy'. For example, it has been conceptualised as an affective process (i.e., the capacity to share another's emotional state) (e.g., Mehrabian & Epstein, 1972), a cognitive process (i.e., the ability to understand another's emotional state) (e.g., Hogan, 1969) and as a combination of affective and cognitive processes in several different multi-component, multi-stage models (e.g., Davis, 1980, 1983; W. L. Marshall, Hudson, Jones & Fernandez, 1995; W. L. Marshall, L. E. Marshall, & Serran, 2009; W. L. Marshall, L. E. Marshall, Serran & O'Brien, 2009; Pithers, 1994). Second, there has been little agreement historically about the type of empathy deficit that potentially could lead to sexual offending. Thus, researchers have explored deficits of a general ability to empathise with others, deficits of victim-group empathy (i.e., empathy deficits for a specific class of potential victim, such as children or women), or deficits of victim-specific empathy (i.e., empathy deficits for the offender's own specific victim) (Varker, Devilly, Ward & Beech, 2008).

The situation is further complicated by the known heterogeneity of sex offenders (Robertiello & Terry, 2007), which raises the possibility of differences in empathetic responding between, for example, those who offend sexually as part of a pervasively antisocial presentation versus those who commit sexual offences only, and those who offend against children and those who do not. Taken together, these issues have resulted in a fragmented and often inconsistent evidence base, with researchers often focusing on whether a specific aspect of the construct of empathy may or may not be related to specific types of sexual offending behaviour.

Nevertheless, there is growing evidence that, while some adult sex offenders may lack aspects of general empathy (e.g., psychopathic offenders (Pithers, 1999)), as a group they may

have less pronounced general empathy deficits overall vis-à-vis non-offenders than do non-sex offenders (Jolliffe & Farrington, 2004; van Langen, Wissink, van Vugt, Van der Stouwe, & Stams, 2014). Alongside this, W. L. Marshall and colleagues have collected evidence indicating that, for example, adult child molesters (Fernandez, W. L. Marshall, Lightbody, & O'Sullivan, 1999) and rapists (Fernandez & W. L. Marshall, 2003) tend to be deficient in victim-specific empathy rather than general empathy.

Taking account of the evidence base, multi-component models of empathy and adult sexual offending have attempted to address the conceptual issues by hypothesising that a variety of cognitive and affective processes lead to an empathetic response, and that these processes may then be inhibited or blocked by a variety of contextual and proximal factors. To give one example, Barnett and Mann (2013, 2017) define empathy as the experience of an appropriately matched (i.e. compassionate) emotional response, and suggest that this experience requires: an attitude that others are worthy of respect; an understanding of how the other person feels in the situation (arising from cognitive processes around perspective-taking and/or synesic role taking) or how you would feel in the other's situation (arising from imaginative processes); the experience of relevant affect, arising from processes of automatic resonance or from the cognitive processes described above; and the ability to cope with the level of emotional distress that is thereby aroused. Barnett & Mann (2013, 2017) further hypothesise that there are a number of 'blocks' to empathetic responding that can occur at different stages in the overall empathetic process, including: deficits in the ability to experience emotionally another person's mental state (contributing to general empathy deficits in certain sub-groups of sexual offenders, including psychopaths); theory of mind deficits and offence-supportive attitudes and schemas (contributing to victim-group empathy deficits); and factors such as the presence of strong negative emotional states, cognitive

deconstruction, a lack of motivation, disinhibitory influences, and cognitive distortions (contributing to victim- or situational-specific empathy deficits).

1.2 Empathy and adolescent sexual offending

Having said that, it is not clear at present whether models of the relationship between empathy and sexual offending derived from research with adults should also apply to sexual offending by adolescents. As a number of commentators have stated (e.g., Burton & Miner, 2017; Smallbone, 2006), there is a need for caution when using research about adult offending to explain adolescent offending, particularly as relatively few ASOs progress to adult sex offending, many adult offenders do not start offending until after adolescence, and many potentially offending-relevant factors (such as sexual orientation, sexual interest, emotion regulation, social functioning, and executive functioning) may be more fluid or less developed in adolescents compared to adults.

Some of these socio-cognitive and emotion regulation factors may also be relevant to the development of empathy (Spinrad & Eisenberg, 2014). The limited evidence about the development of empathy in adolescence suggests that components of empathy continue to develop into early adolescence (L. E. Marshall, 2002) and that empathetic responding may even decrease at times during adolescence (Spinrad & Eisenberg, 2014). It is possible, therefore, that adolescents will exhibit different empathy deficits to adults for developmental reasons. Indeed, there is some evidence that studies using ASOs find a significantly higher negative effect of empathy on offending than studies using adult sex offenders (Jolliffe and Farrington, 2004), suggesting that the relationship between empathy and sex offending may be different for each group. If so, separate explanations of any link between empathy and adolescent sexual offending may need to be developed.

A broad narrative review of the empathy and adolescent sexual offending literature was undertaken by Varker et al. in 2008. Among other things, this briefly summarised the findings

from five studies of ASO empathy levels, and concluded that the evidence about the presence and nature of empathy deficits was inconclusive[2]. However, there have been no systematic reviews looking specifically at the relationship between empathy and adolescent sexual offending. Although some meta-analyses of empathy and sex offending have included ASO samples (e.g., meta-analyses of between-group offender studies by Jolliffe and Farrington (2004) and van Langen, Wissink, van Vugt, Van der Stouwe and Stams (2014); and meta-analyses of recidivism studies by Hanson and Bussière (1998) and Hanson and Morton-Bourgon (2005)), these samples were a very small minority of the total studies used in the overall analysis. Similarly, although Seto and Lalumière's (2010) meta-analysis of ASO/NSO comparison studies included some studies measuring empathy, they did not examine the construct of empathy separately in their analysis of offence, victim, psychological and social characteristics, but instead included it with a variety of other constructs in an analysis of "antisocial personality traits". Other reviews of ASO comparison studies (e.g., Keelan & Fremouw, 2013; van Wijk et al., 2006) mention empathy only briefly, if at all. In addition, although meta-analyses suggest, on balance, that sex offender interventions aimed at adolescents may reduce recidivism (Hanson, Bourgon, Helmus, & Hodgson, 2009; Reitzel & Carbonell, 2006), no systematic reviews have specifically examined the impact of empathy treatment components on ASO recidivism.

To clarify the current state of the adolescent evidence base regarding the extent and nature of adolescent sexual offender empathy deficits, this article provides a systematic critical review of empirical studies examining the relationship between empathy and adolescent sexual offending.

[2] Varker et al. (2008) actually report on seven studies in their section about adolescent sexual offender empathy levels, but it is not clear why articles by Knight and Prentky (1993) or Kaplan and Arbuthnot (1985) were included, as the former does not appear to measure empathy and the latter refers to its participants as "juvenile delinquents" with no mention of any being sex offenders.

2. Search strategy, data collection and analysis

Relevant studies for this review were found by searching the PsychINFO, PubMed, Cochrane Library, and Campbell Collaboration databases. The search strategy combined the keyword "empath*" with search terms that attempted to capture the wide variety of descriptors used in the research literature for sexual offending behaviours (ranging from general descriptors such as 'sex abuse' or 'sexual assault' to more specific terms for types of sex offences such as 'paedophilia' or 'rape') and the different terms commonly used for the adolescent age group (such as 'adolescent' or 'juvenile' or 'young person') (full details are available on request). In effect, the search strategy simply combined different terms for empathy and adolescent sex offending. By taking this broad approach, it was hoped that the search would capture every relevant comparison, longitudinal or experimental study that related to empathy and ASOs.

In order to include studies of general, victim and victim-specific empathy, this review followed Jolliffe and Farrington (2004), Varker et al. (2008), van Langen et al. (2014), and others by using Cohen and Strayer's (1996, p.988) broad definition of empathy as "the ability to understand and share in another's emotional state or context". A study was included in this review if it: (a) was an empirical study designed to detect a cross-sectional or longitudinal relationship between empathy deficits and sex offending; (b) used a measure identified by the study authors as a measure of cognitive and/or affective empathy covering one or more potential operationalised empathy deficit (i.e., general, victim-group or victim-specific empathy); (c) was written in English; (d) was published in a peer-reviewed journal; and (e) examined adolescent male sexual offenders, where 'adolescent' was defined for the purposes of the review as covering the 10-20 age range. This relatively wide age range was chosen to balance legal, developmental and research descriptions of adolescence. Face cue perception studies and other studies measuring the initial neuro-cognitive stage of empathy recognition

were excluded. Studies measuring callous-unemotional traits, such as those included in the Psychopathy Checklist-Revised (PCL-R) (Hare, 1991), were also excluded, as definitions of these traits include other distinct cognitive, emotional, and personality characteristics alongside lack of empathy (Frick & White, 2008).

The strength of evidence in relevant studies was assessed, guided by the questions outlined in the Health Evidence Bulletins Wales guidance on the critical appraisal of observational studies (Health Evidence Bulletins Wales, 2004). These cover, among other things, the appropriateness of design and statistical method, the representativeness of samples, and completeness of data. Issues regarding study design, assessment, and sampling were also assessed across the literature as a whole.

3. Results

The initial database searches found a total of 1,509 articles, which reduced to 16 full-text articles once the inclusion criteria had been applied (Fig. 1).

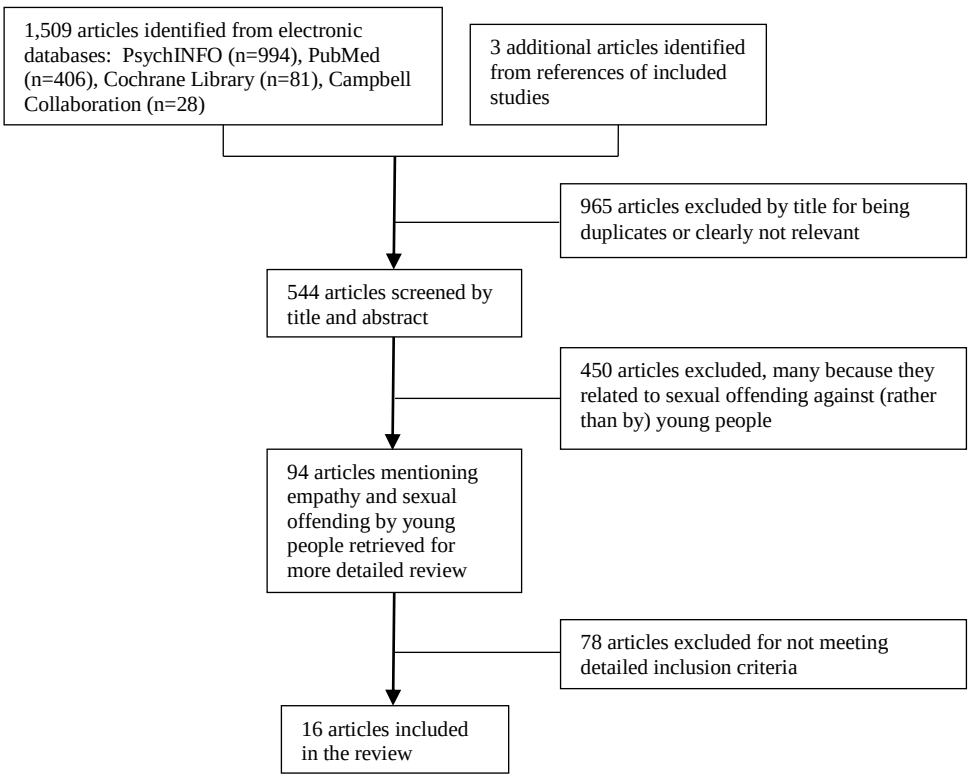

Fig. 1. Flowchart of article selection process.

Two articles were included in the final analysis even though some of their data may have come from participants aged over 20. First, Tidefors et al. (2011) had one participant aged 22 and another aged 20 in their ASO sample. As their sample had 45 participants and a mean age of 16.2, this study was included because two scores from older participants were unlikely to have skewed the results. Second, although Farr et al. (2004) did not report an age range, the mean age (17.3) and S.D. (2.19) of their ASO group indicates that it could have included participants older than 20. Although unable to provide an age range, one of the study's authors has commented that the S.D. appears high and that the study attempted to identify a matched normative sample (J. Brown, personal communication, November 9, 2015), so it has been included in this review on the assumption that the ASO group had a similar age range to that of the comparison group (i.e., 16-18).

3.1 Study characteristics

The main characteristics and findings of each study identified are outlined in Table 1, below. This should be read in conjunction with Table 2, which describes the empathy measurement tools used by each study.

Table 1

Characteristics and findings of ASO empathy studies

Authors, year and country	Sample group (SG)	Comparison group (CG)	Empathy measured					Findings	
			Cognitive	Affective	General	Victim-group	Victim-specific		Evidence of link between empathy and adolescent sex offending? (Y/N)
Smith and Monastersky (1986) (US)	"Juvenile sexual offenders" (mixed offence types) (n = 112) SG age range = 10-16 years; mean = 14.1	n/a	•	-	-	-	•	No association found between empathy item score and re-offence status (statistics not given).	N
Monto, Zgourides, Wilson, and Harris (1994) (US)	"Adolescent sex offenders" (offence types not specified) (n = 82) SG age range = 12-19 years; mean = 16.0	Non-offending group (high school students) (n = 108) CG age range = 14-19 years; mean = 16.3	•	•	•	-	-	No significant difference found between SG and CG in empathy scores (F = 1.39, t = 0.36, df = 188, p = 0.72; SG mean = 2.88, SD = 1.37; CG mean = 2.94, SD = 1.17).	N
Monto, Zgourides, and Harris (1998) (US)	"Adolescent sexual offenders" (offence types not specified) (n = 84) SG age range = 12-19 years; mean = 16.0	Non-offending group (high school students) (n = 111) CG age range = 14-19 years; mean = 16.32	•	•	•	-	-	No significant relationship found between scores on the empathy measure and sex-offender status (r = -.026, *n.s.*). Based on a sub-sample of 33 ASOs, no significant relationships were found between empathy scores and severity of offence (r = 0.104, p = 0.61), amount of force used (r = 0.165, p = 0.42) and whether or not it was a penetration offence (r = 0.151, p = 0.47).	N

Authors, year and country	Sample group (SG)	Comparison group (CG)	Empathy measured					Findings	
			Cognitive	Affective	General	Victim-group	Victim-specific		Evidence of link between empathy and adolescent sex offending? (Y/N)
Hunter and Figueredo (2000) (US)	"Adolescent child molesters" with a history of sexual victimisation (n = 55) and "adolescent child molesters" without a history of sexual victimisation (n = 72) Age range of full sample (SG & CG) = 13-17 years; mean = 14.7; SD = 1.44 (n = 235)	Composite control group made up of: Adolescents with a history of sexual victimisation but no history of sexual perpetration (n = 28) Adolescents with a history of emotional or behavioural maladjustment but no history of sexual victimisation or perpetration (n = 40) Adolescents without a history of sexual victimisation or perpetration or significant emotional or behavioural maladjustment (n = 40)	•	•	•	-	-	Cognitive and emotional empathy scales were found to load onto a 'sexual maladjustment' factor, which did not fit into a structural model predicting sexual offending.	N
Burke (2001) (US)	"Adolescent sex offenders" (offence types not specified) (n = 23) SG age range = 13-17 years; mean = 15.48; SD = 1.12	Non-offending group (high school students) (n = 23) CG age range = 15-18 years; mean = 16.30; SD = 0.88	•	•	•	-	-	Significant differences were found between SG and CG in overall scores on the IRI (t = -2.37, df = 44, p < 0.02; SG mean = 76.52, SD = 12.39; CG mean = 85.30, SD = 13.91) and on two of the IRI subscales: Perspective Taking (t = -2.85, df = 44, p < 0.009; SG mean = 18.30, SD = 4.12; CG mean = 21.87, SD = 4.37) and Empathic Concern (t = -2.29, df = 44, p < 0.03; SG mean = 20.43, SD = 5.44; CG mean = 23.87, SD = 4.76). No significant differences were found on the other two IRI subscales: Fantasy (SG mean = 19.65, SD = 4.80; CG mean = 21.70, SD = 4.33) and Personal Distress (SG mean = 18.13, SD = 3.44; CG mean = 17.87, SD = 4.52).	Y

Authors, year and country	Sample group (SG)	Comparison group (CG)	Empathy measured					Findings	
			Cognitive	Affective	General	Victim-group	Victim-specific		Evidence of link between empathy and adolescent sex offending? (Y/N)
Lindsey, Carlozzi, and Eells (2001) (US)	"Juvenile sex offenders" (a "large majority" being child molesters) (n = 27) SG age range = 13-18; mean = 15.78, SD = 1.2	CG1: Non-offending group (drawn from a university research setting) (n = 27) CG2: Delinquent non-sexual offenders (n = 27) CG participants matched on age to SG participants	•	•	•	-	-	Comparison of SG and CG1 found a significant difference in scores on the IRI's Personal Distress subscale (F = 7.118, df = (1, 26), p < 0.013; SG mean = 11.15, SD = 4.00; CG1 mean = 8.00, SD = 4.63) but not for Empathic Concern (SG mean = 13.41, SD = 3.81; CG1 mean = 15.07, SD = 5.38), Fantasy (SG mean = 14.96, SD = 5.33; CG1 mean = 12.63, SD = 4.36) or Perspective Taking (SG mean = 11.04, SD = 4.03; CG1 mean = 13.59, SD = 5.19). Comparison of SG and CG2 found a significant difference in scores on the Empathic Concern subscale (F = 12.618, df = (1, 26), p < 0.001; SG mean = 13.41, SD = 3.81; CG2 mean = 17.07, SD = 4.43) but not for Personal Distress (SG mean = 11.15, SD = 4.00; CG2 mean = 11.85, SD = 5.29), Fantasy (SG mean = 14.96, SD = 5.33; CG2 mean = 11.67, SD = 4.45) or Perspective Taking (SG mean = 11.04, SD = 4.03; CG2 mean = 12.48, SD = 5.91). Comparison of CG1 and CG2 found a significant difference in scores on the Personal Distress subscale (F = 9.141, df = (1, 26), p < 0.006; CG1 mean = 8.00, SD = 4.63; CG2 mean = 11.85, SD = 5.29) but not on any other subscales.	Y
Moriarty, Stough, Tidmarsh, Eger, and Dennison (2001) (Australia)	"Adolescent sex offenders" (mixed offence types) (n = 15) SG age range = 14-17 years; mean = 16.93; SD = 1.79	Non-offending group (secondary school pupils) (n = 49) CG age range = 14-17 years; mean = 15.24; SD = 1.07	•	•	•	-	-	SG scored lower compared to CG on total IRI score and each subscale score, but none of these differences was statistically significant: Total score: F = 1.01, *n.s.*; SG mean = 52.67, SD = 12.32; CG mean = 56.02, SD = 11.03; Personal Distress subscale: F = 0.06, *n.s.*; SG mean = 12.73, SD = 4.11; CG mean = 13.20, SD = 7.40; Empathic Concern: F = 0.42, *n.s.*; SG mean = 13.27, SD = 4.11; CG mean = 13.82, SD = 2.71; Fantasy: F = 0.62, *n.s.*; SG mean = 12.80, SD = 4.51; CG mean = 13.80, SD = 4.22; Perspective Taking: F = 1.41, *n.s.*; SG mean = 13.87, SD = 4.58; CG mean = 15.02, SD = 3.57.	N

Authors, year and country	Sample group (SG)	Comparison group (CG)	Empathy measured					Findings	
			Cognitive	Affective	General	Victim-group	Victim-specific		Evidence of link between empathy and adolescent sex offending? (Y/N)
O'Halloran et al. (2002) (Ireland)	"Adolescents who sexually abuse other youngsters" (both intra- and extra-familial) (n = 27) SG age range = 12-18 years; mean = 15.5; SD = 1.20	CG1: Adolescents with conduct and emotional difficulties attending outpatient mental health services (n = 20) CG1 age range = 12-18 years; mean = 13.62; SD = 1.29 CG2: Adolescents without a history of sexually abusive behaviours or attendance at mental health services (secondary school pupils) (n = 29) CG2 age range = 12-18 years; mean = 13.79; SD = 1.00	•	•	•	-	-	Significant differences were found between SG and CG2 and between CG1 and CG2 on the IRI Perspective Taking subscale, but not between SG and CG1: $F = 88.83$, $p < 0.01$; SG mean = 11.00, SD = 3.70; CG1 mean = 12.91, SD = 4.83; CG2 mean = 32.30, SD = 4.27. Significant differences were found between SG and CG1 and between CG2 and CG1 on the Personal Distress subscale, but not between SG and CG2: $F = 5.71$, $p < 0.01$; SG mean = 9.74, SD = 4.14; CG1 mean = 14.05, SD = 4.68; CG2 mean = 11.13, SD = 4.31. No significant differences were found between the groups on Empathic Concern ($F = 0.37$, *n.s.*; SG mean = 14.73, SD = 4.12; CG1 mean = 15.28, SD = 3.96; CG2 mean = 14.20, SD = 4.69) or Fantasy ($F = 0.96$, *n.s.*; SG mean = 6.77, SD = 1.52; CG1 mean = 6.50, SD = 1.10; CG2 mean = 7.00, SD = 1.00).	Y
Curwen (2003) (Canada)	"Adolescent sex offenders" (mixed offence types) (n = 123) SG age range = 12-19 years; mean = 15.61; SD = 1.52	n/a	•	•	•	-	-	ASOs who committed a higher (clinician-rated) level of violence in their sexual offences reported higher levels of IRI Perspective Taking ($r = 0.28$, $p < 0.05$, one-tailed) and Empathic Concern ($r = 0.36$, $p < 0.01$, one-tailed). No significant relationship found between level of sexual violence and Personal Distress ($r = -0.01$, $p > 0.05$). Fantasy scale not used in the analysis.	Y
Farr, Brown, and Beckett (2004) (UK)	"Adolescent sex offenders" (predominately peer offenders or perpetrators of sexual assault on older females) (n = 44) SG mean age = 17.3 years; SD = 2.19	Non-offending group (6th form college students and adolescents in a homeless hostel) (n = 57) CG age range = 16-18 years; mean = 17.4; SD = 0.75	•	-	•	•	-	Significant differences were found between SG and CG in overall scores on the EGT ($t = 2.878$, df = 67.34, $p < 0.01$; SG mean = 28.07, SD = 9.64; CG mean = 23.32, SD = 5.93) and on two EGT subscales: Hostile Errors ($t = 2.032$, df = 72.11, $p < 0.05$; SG mean = 8.09, SD = 4.97; CG mean = 6.32, SD = 3.38) and Over-Sexualised Errors ($t = 3.317$, df = 99, $p < 0.001$; SG mean = 16.66, SD = 6.63; CG mean = 12.65, SD = 5.51), but not for Fake Errors ($t = -1.34$, *n.s.*; SG mean = 5.20, SD = 3.21; CG mean = 6.05, SD = 3.11).	Y

Authors, year and country	Sample group (SG)	Comparison group (CG)	Empathy measured					Findings	
			Cognitive	Affective	General	Victim-group	Victim-specific		Evidence of link between empathy and adolescent sex offending? (Y/N)
Whittaker, Brown, Beckett, and Gerhold (2006) (UK)	"Adolescent child molesters" (intra- and extra-familial) (n = 94) taken from a wider sample. Age range of wider sample = 14-16 years; mean = 15.06; SD = 0.77 (no age data for SG subjected to empathy measure)	Non-offending group (secondary school pupils) (n = 55) CG age range = 14-16 years; mean = 14.89; SD = 0.69	•	•	-	•	-	Significant differences were found between SG and CG in overall empathy distortion error scores (t = 4.017, df = 140.75, p < 0.001; SG mean = 21.95, SD = 13.52; CG mean = 14.39, SD = 9.39) and number of "don't know" responses (t = 2.223, df = 147, p = 0.028; SG mean = 3.91; CG mean = 1.98). Analysis of scores for each vignette found a significant difference for scores on one vignette (t = 3.84, df = 63.616, p < 0.001; SG mean = 21.19, SD = 13.89; CG mean = 11.60, SD = 6.89) but not for scores on the other (t = 1.637, df = 75, p = 0.053 [reported in text] p = 0.106 [reported in table]; SG mean = 22.56, SD = 13.33; CG mean = 17.53, SD = 10.93). No relationship found between total empathy distortion error score and number of victims.	Y
Varker and Devilly (2007) (Australia)	"Adolescent sexual offenders" (mixed offence types) (n = 16) SG age range = 13-20 years; mean = 16; SD = 1.93	Non-offending group (secondary school pupils) (n = 16) (data for this sample was provided by Moriarty et al., 2001) CG age range = 14-17 years; mean = 15.75; SD = 1.13	•	•	-	•	•	Significant differences were found between SG and CG on two of the IRI subscales: Perspective Taking (Z = -2.19, df = 16, p < 0.05; SG mean = 13.56, SD = 3.98; CG mean = 16.75, SD = 3.23) and Fantasy (Z = -2.15, df = 16, p < 0.05; SG mean = 16.06, SD = 5.9; CG mean = 12.69, SD = 3.16). No significant differences were found on the other two IRI subscales: Empathic Concern (Z = -1.71, df = 16, *n.s.*; SG mean = 16.25, SD = 4.36; CG mean = 14.13, SD = 3.40) and Personal Distress (Z = -1.53, df = 16, *n.s.*; SG mean = 10.63, SD = 4.41; CG mean = 12.56, SD = 2.61).	Y
Van Vugt et al. (2008) (Holland)	"Solo juvenile sex offenders" (offence types not specified) (n = 20) SG age range = 13-19 years; mean = 16.00; SD = 1.72	Non-offending group (not specified) (n = 76) CG age range: 13-19 years; mean = 15.09; SD = 1.40	-	•	-	•	-	No significant differences found between SG and CG scores on victim-based orientation to general situations (t = -1.52, *n.s.*, d = 0.39; SG mean = 3.36, SD = 0.49; CG mean = 3.14, SD = 0.59) or sexual situations (t = -1.07, *n.s.*, d = 0.26; SG mean = 3.29, SD = 0.59; CG mean = 3.12, SD = 0.66).	N

Authors, year and country	Sample group (SG)	Comparison group (CG)	Empathy measured					Findings	
			Cognitive	Affective	General	Victim-group	Victim-specific		Evidence of link between empathy and adolescent sex offending? (Y/N)
Hart-Kerkhoffs, Doreleijers, Jansen, van Wijk, and Bullens (2009) (Holland)	"Juvenile sex offenders", made up of child molesters (n = 30), solo peer sex offenders (n = 54) and group sex offenders (n = 90) SG mean age = 14.9 years, SD = 1.4	Correlational design for sample as a whole, and comparison of individual sample sub-groups.	•	•	-	-	•	For the sample as whole, lack of empathy was found to be a predictor for violent recidivism (b = 0.847, p < 0.05, odds-ratio = 2.33) [in other words, a one unit increase in lack of empathy leads to a predicted increase of 2.33 in the odds of being in the violent recidivism group] but not for multiple sex offending (statistic not given). Overall, 44.1% of the SG was classed as having a lack of empathy. No significant differences were found in the number of participants in each sub-group rated as "lacking empathy" (chi square = 0.894, df = 2, 174, p = 0.64).	N
Tidefors, Goulding, and Arvidsson (2011) (Sweden)	"Adolescents who sexually offend" (mixed offence types) (n = 45) SG age range = 13-22 years; mean = 16.2; SD = 1.9	Non-offending group (junior high school students) (n = 42) CG mean age = 15.5 years; SD = 0.70	•	•	•	-	-	No significant difference found between SG and CG in scores on the IRI (*t* = -0.93, p = 0.353; SG mean = 50.2, SD = 15.0; CG mean = 52.9, SD = 10.8). (This study also attempted to compare ASOs and NOs on cognitive and affective victim-group empathy using the Victim Empathy Scale, but were unable to report on their data due to a 48% attrition rate.)	n/a
Netland and Miner (2012) (US)	"Adolescent sex offenders" made up of: SG1: offenders against children (n = 76) SG2: peer/adult sex offenders (n = 49) SG3: offenders who had assaulted both children and peers/adults (n = 26) SG age range = 13-18 years	Delinquent non-sexual offenders (n = 78) CG age range = 13-18 years	-	•	•	-	-	No significant differences in empathy scores were found between SG1, SG2 and SG3, but each of these groups were found to have significantly lower scores on the empathy measure than CG (i.e., indicating that SG participants had higher affective general empathy): *F* = 5.55, df = (3, 225), p = 0.001; SG1 mean = 17.32, SD = 4.65; SG2 mean = 16.39, SD = 3.98; SG3 mean = 16.27, SD = 3.86; CG mean = 19.13, SD = 4.24.	Y

3.1.1 Study designs

All the studies used observational designs exploring whether it was possible to find a statistically significant association between empathy and offending or an elevated conditional probability between different participant groups. Fourteen studies made cross-sectional group comparisons. Three studies analysed cross-sectional relationships between empathy scores and offence-related factors, and two studies utilised follow-up correlational designs assessing whether empathy deficits predicted recidivism. No studies were identified that involved experimental manipulation of empathy or other methods (such as placing offenders into empathy and non-empathy interventions) that could establish whether changes in empathy affect likelihood of onset or maintenance of offending.

3.1.2 Assessment tools

The studies attempted to measure a variety of types of empathy, using a number of different psychometric tools, described in Table 2. Measured against best-practice standards (e.g., DeVon et al., 2007), the reliability and validity of many of the empathy assessment tools used by the studies in this review appear to be lacking. Moreover, although the IRI, HES, and QMEE (and variants such as the lack of empathy scale in the MIDSA) have had more extensive assessment of their validity and reliability, even their adequacy remains subject to debate. More broadly, it could be argued that many of the self-report measures used to assess empathy do not directly measure the respondent's ability to be empathetic, but instead measure the respondent's understanding of the construct: for example, the Perspective Taking subscale of the IRI[3] appears to measure the respondent's assessment of the extent to which they habitually consider the perspectives of other people rather than their actual perspective-taking ability (Hanson & Scott, 1995). It has also been suggested that the transparent nature of self-report empathy measures may leave them open to the influence of social desirability on responding when assessing sex offenders (Tierney & McCabe, 2001; for specific analysis

[3] See Table 2 for a description of this scale and the others used in the IRI.

of the IRI see Curwen, 2003). Researchers can control for this by using empathy measures that assess socially desirable responding or by using additional measures to identify such responding; however, nearly half of the studies that used self-report tools did not describe attempts to control for social desirability (Burke, 2001; Hunter & Figueredo, 2000; Moriarty et al., 2001; Netland & Miner, 2012; Lindsey et al., 2001; Van Vugt et al., 2008).

Table 2

Instruments used for measuring empathy

Instrument	Description	Reliability	Validity	Instrument used by:
Empathy item in Juvenile Sexual Offender Decision Criteria	• Clinician-rated empathy score ("Offender acknowledges and understands the negative impact of the offense on victim (empathy)") from a local juvenile sex offender programme protocol for assessing offenders.	• No reliability or validity information provided.		• Smith and Monastersky (1986)
Empathy item in Global Assessment Instrument for Juvenile Sex Offenders (GAIJSO) (Wijk, van Hart, Doreleijers, & Bullens, 2005).	• Clinician-rated empathy score ("Shows no / some / adequate empathy for the victim") from a tool developed in the Netherlands for use in clinical practice to evaluate sexual offence and offender characteristics.	• It was not possible to find any reliability or validity information from the paper detailing the instrument's development as this was written in Dutch. Harts-Kerkhoffs et al. (2009) give no reliability or validity information, and report that inter-rater and test-retest reliability had yet to be established.		• Hart-Kerkhoffs et al., (2009)
Measure of empathy for adolescents (Monto et al., 1998; Monto et al., 1994)	• Four "yes/no" self-report items "designed to assess general tendencies toward empathy" (Monto et al., 1998, p.130), namely: "Do you sometimes feel sorry for other kids when they are beaten up?"; "Do you sometimes worry about other people who are having problems?"; "Do you think that people should just take care of themselves and not worry about others?"; and "Do you sometimes worry about homeless people?"	• Internal consistency: Cronbach's alpha: .68 • Test-retest: .67 (26 college students).	• Construct validity: Scores on measure were negatively related to participants' responses about whether they hated, beat up or wanted to hurt other children at school. However, scores on measure were not related to participants' responses about whether they would force someone to have sex with them if they were sure they would not be caught.	• Monto et al., 1998 • Monto et al., 1994

Instrument	Description	Reliability	Validity	Instrument used by:
Adapted Moral Orientation Measure (adapted MOM) (Brugman, Rutten, Stams, & Tavecchio, 2006, cited in Stams et al., 2008)	• The MOM is a validated (Stams et al., 2008) self-report measure designed to assess moral judgement and primarily affective victim-group empathy. It contains nine perpetrator/victim vignettes. Respondents are asked to evaluate consequences for the perpetrator and answer items assessing separately both affective victim-group empathy and moral judgement. The adapted MOM (Van Vugt et al., 2008) includes additional items involving a situation of sexual misconduct.	• Internal consistency for adapted MOM victim-based orientation: Cronbach's alpha: .70 (general situation) and .79 (sexual situation).	• Construct validity for adapted MOM examined by factor analysis, showing a good fit to the data: comparative fit index/Tucker Lewis index = 0.97, $\varkappa^2(150) = 175.31$, p = 0.08.	• Van Vugt et al. (2008)
Empathy for Girls Test (EGT) (Beckett, [n.d.] (unpublished), cited in Farr et al., 2004)	• Adapted from Hanson and Scott's (1995) Empathy for Women Test, which appears to be designed to assess cognitive general and victim-group empathy. The Empathy for Women Test is also sensitive to respondents attempting to present themselves as over-empathetic. • EGT is a self-report measure consisting of eight vignettes about abusive, non-abusive or ambiguous social/sexual interactions. Participants are asked to rate how a girl is likely to feel from a list of possible responses accompanied by a three-point Likert scale.	• Internal consistency: Cronbach's alpha: .72.	• No information found. Validity cannot be extrapolated from the Empathy for Women Test as this contains considerably more vignettes (15) and a seven-point Likert scale.	• Farr et al. (2004)
Victim Empathy Scale (VES) (Beckett & Fisher, 1991 (unpublished), cited in Whittaker et al., 2006; Beckett & Fisher, 1994 (unpublished), cited in Varker & Devilly, 2007)	• Self-report measure consisting of 28 empathy-related questions measured on a five-point Likert scale. Is applied to participants considering (i) their own victim and (ii) one or more vignettes about a general sexual abuse victim. • Depending on vignettes used, measure is designed to assess cognitive and affective victim-group and/or victim-specific empathy: low scores represent a high level of empathy (and a low level of cognitive distortions).	• Internal consistency: Cronbach's alpha: .89 (in 140 untreated child molesters) (Beech, 1998) • Test-retest: .95 (in 45 untreated child molesters) (Beech, 1998)	• Discriminant validity: significant difference shown between mean scores of offenders reporting on their own victims and non-offenders reporting on selection of vignettes (Beckett, Beech, Fisher, & Fordham, 1994).	• Whittaker et al. (2006) (using two general sexual abuse victim vignettes and an adapted VES questionnaire and scoring system, giving an internal consistency of 0.8) • Varker and Devilly (2007) (used an own victim form and a general sexual abuse victim vignette)

Instrument	Description	Reliability	Validity	Instrument used by:
Interpersonal Reactivity Index (IRI) (Davis, 1980, 1983)	• Self-report measure designed to measure cognitive and affective components of general empathy. • Consists of four seven-item subscales measured on a five point Likert scale: two cognitive subscales ("Fantasy", which taps the tendency to transpose oneself imaginatively into fictional situations, and "Perspective Taking", which assesses the tendency to shift to another's perspective) and two affective subscales ("Empathic Concern", which assesses feelings of warmth, compassion and concern for others, and "Personal Distress", which measures the respondent's own feelings of discomfort in response to the negative experiences of others. • It is important to note that the IRI was not designed to yield a "total empathy score" from summation of subscale scores and should not be used for this purpose because the four subscale scores are not all positively correlated (D'Orazio, 2004).	• Internal consistency of subscales (Cronbach's alpha) ranges from .71-.77. • Test-retest reliability of subscales range from: .61-.71.	• Construct validity: Inferred from factor analysis during measure's development and supported by numerous other studies, including with adolescent samples (Hawk et al., 2013). • However, Jolliffe and Farrington (2006) have argued that the IRI fails to measure both affective and cognitive empathy adequately, on the grounds that the Empathic Concern scale contains items measuring sympathy and the Perspective Taking scale contains items measuring the broad ability to take another's perspective rather than the specific ability to understand another's emotions. • A detailed explanation of the development of the IRI, which includes the items used, is freely available on the internet (Davis, 1980), which may increase the potential for confounding factors such as social desirability to be introduced in testing.	• Burke (2001) • Lindsey et al. (2001) • Moriarty et al. (2001) • O'Halloran et al. (2002) • Curwen (2003) (used Perspective Taking, Empathic Concern, and Personal Distress Scales only) • Varker and Devilly (2007) • Tidefors et al. (2011)
Hogan Empathy Scale (HES) (Hogan, 1969)	• Self-report measure designed to measure cognitive general empathy. • Consists of 64 true/false items, e.g., "As a rule I have little difficulty in 'putting myself into other people's shoes'" and "I am a good mixer".	• The reliability and validity of the HES has been analysed extensively. A number of studies have found evidence supporting the HES's reliability and validity, particularly for males, but the evidence is inconsistent and some studies suggest it may lack construct validity and is an inadequate measure of empathy (see Chlopan, McCain, Carbonell, and Hagen (1985) and Froman and Peloquin (2001) for contrasting views).		• Hunter and Figueredo (2000)

Instrument	Description	Reliability	Validity	Instrument used by:
Questionnaire Measure of Emotional Empathy (QMEE) (Mehrabian & Epstein, 1972)	• Self-report measure designed to measure affective general empathy. • Consists of 33 items (e.g., "It makes me sad to see a lonely stranger in a group" and "The people around me have a great influence on my moods") measured on a nine point Likert agreement-disagreement scale.	• Split-half reliability: .84; test-retest: .83 (Bryant, 1982, cited in Jolliffe & Farrington, 2004).	• Construct validity: Inferred from factor analysis during measure's development and from findings that scores on measure were related to helping behaviours, neuroticism, social awareness and inhibition of delivery of electric shocks when the "victim" was nearby (see Choplan et al.,1985). • However, based on their confirmatory factor analysis, Dillard and Hunter (1989) argue that the total QMEE score does not measure affective empathy and should not be used for this purpose. Jolliffe and Farrington (2006) have also argued that the QMEE fails to measure affective empathy adequately.	• Hunter and Figueredo (2000)
Lack of empathy scale in the Multidimensional Inventory of Development, Sex and Aggression (MIDSA) (Auger Enterprises, Inc., 2011)	• Self-report measure of affective general empathy consisting of eight items measured on Likert scales, modelled on the IRI and QMEE. • Referring to the 2007 version of the MIDSA, Netland and Miner (2012) report that the scale is made up of six items with an internal consistency of Cronbach's alpha .73. It was not possible to source a 2007 version of the MIDSA manual for this review.	• Internal consistency (for ASO sample): .75 • Inter-rater reliability assessed in development of inventory	• Convergent validity (for ASO sample): $r(327) = .376$, $p < .001$ with a measure of perspective-taking. • Various strategies used to ensure validity of MIDSA scales, including factor analyses, structural equation modelling, cross-sample confirmatory replication and comparisons to community controls. • The Manual, which lists the items, scoring procedure and rationale for the scale, is freely available on the internet, which may increase the potential for confounding factors such as social desirability to be introduced in testing.	• Netland and Miner (2012)

3.1.3 Sampling

The characteristics of participants often differed in important ways between different studies, which, taken together with other differences between studies (such as the different empathy measures used), make it difficult to compare the findings of individual studies. For example, although all the studies purported to be a contribution to the adolescent sex offending literature, there was little consistency in how they defined the adolescent age range (as an illustration, Smith and Monastersky's (1986) ASO sample was aged 10-16, while Varker and Devilly's (2007) sample was aged 13-20). Similarly, several different ASO offender type samples were used by the studies: seven studies analysed empathy scores for mixed ASO samples that included perpetrators of various sexual offence types; six analysed scores for samples made up fully or predominantly of ASOs against other youngsters; two analysed scores for other sub-groups of ASOs; and four did not specify the ASO sample offence type. Further, group comparison studies also utilised several different comparison samples. Eleven utilised an NO comparison group, usually made up of high school or university students; three compared ASOs with a group of NSOs or adolescents with behavioural difficulties; one compared ASOs with a mixed group of NOs and NSOs; and one compared different sub-types of ASO.

Particularly in relation to the group comparison studies, it is also worth noting that, because it is possible to commit a sexual offence without being caught (as evidenced by the finding that a sizeable minority of adolescent offenders who are ostensibly non-sex offending have in fact committed sexual offences (Fleming, Jory, & Burton, 2002; Spaccarelli, Bowden, Coatsworth, & Kim, 1997)), a potential limitation of all the comparison groups is that they may have included some members who had engaged in the same sexual offending behaviours as the members of the other groups against which they were being compared.

Finally, it should also be noted that the empathy of ASO participants in all the studies was assessed after their offending behaviour had taken place, when they may have been in a qualitatively different psychological state compared to just before and during their offending.

3.2 Key findings

3.2.1 General empathy: Evidence from ASO / NO comparisons

Six studies compared ASOs and NOs using the IRI. Tidefors et al. (2011) only compared the groups on their overall IRI score, which is inappropriate for the reasons explained by D'Orazio (2004)[4]. Several other studies compared ASOs with NOs: Burke (2001) found that ASOs had significantly lower Perspective Taking and Empathic Concern scores than NOs but did not differ on Fantasy or Personal Distress scores; Varker and Devilly (2007) found that ASOs had significantly lower Perspective Taking scores and significantly higher Fantasy scores than NOs, but no differences in Empathic Concern or Personal Distress; Lindsey et al. (2001) found that ASOs had significantly higher Personal Distress scores compared to NOs, but no significant differences on the other IRI subscales; and O'Halloran et al. (2002) found significantly lower Perspective Taking scores for ASOs compared to NOs, but no other differences between these groups on the IRI subscales. Moriarty et al. (2001) found no significant differences between ASOs and NOs on any subscales.

Taken together, these IRI comparison studies do not provide any compelling evidence that Empathic Concern, Fantasy or Personal Distress scores distinguish ASOs from NOs. Three of the five studies found that ASOs had lower Perspective Taking scores, and it is tempting to suggest that this provides some evidence of lower cognitive empathy in ASOs. However, there are several potential confounding factors that make it difficult to draw even this tentative conclusion. First, these studies all had relatively small ASO sample sizes (amounting to 108 ASOs in total). Second, there was variability between the ASO groups in

[4] Burke (2001) and Moriarty et al. (2001) similarly compared their groups on overall IRI scores; however, they also reported comparisons on IRI subscale scores.

different studies regarding the offender types included. Third, there was variability between the characteristics of the ASO groups and their comparison groups. For example, in Moriarty et al. (2001) and O'Halloran et al. (2002) there were mean age differences of over a year between ASO and comparison groups. Although the latter study did attempt to control for this statistically, empathy has a significant maturational component (L. E. Marshall, 2002) and age differences may therefore be a confounding factor (W. L. Marshall, L. E. Marshall, & Serran, 2009). Similarly, Burke (2001), Lindsey et al. (2001), Moriarty et al. (2001) and Varker and Devilly (2007) (using a sub-sample of the Moriarty et al. (2001) sample for the comparison group) did not control for other demographic variables that may have affected risk of offending or empathy scores, such as socio-economic status, level of education and intelligence. Finally, all the ASO participants were in treatment, either in community sex offender treatment programmes (Burke, 2001; Moriarty et al., 2001; O'Halloran et al., 2002; Varker & Devilly, 2007) or in a medium-security treatment facility (Lindsey et al., 2001), which may have influenced their empathy scores due to the fact that treatment programmes usually include interventions to increase empathy.

Farr et al. (2004) was the only other study identified that compared ASOs with NOs on a measure of cognitive general empathy (specifically perspective-taking). Using the EGT, Farr et al. (2004) found that ASOs scored significantly higher overall (indicating lower perspective-taking) than NOs. In particular, ASOs were found to be significantly more likely to underestimate a girl's distress and attribute hostile and sexual motives to her. No difference was found between groups on items indicating that respondents were attempting to make themselves appear more empathetic. This study had a relatively large number of participants in the ASO group (n = 44), and the ASO and comparison groups were relatively well matched on age and socio-economic status. However, no information was provided about the construct validity of the EGT. It is also worth noting that the EGT contains some vignettes in which a

girl appears to be a victim of abuse and some in which the interactions are non-abusive or ambiguous, which suggests that it may measure both cognitive general and victim-group empathy as it relates to a particular group of people (girls). If so, it is difficult to know whether Farr et al.'s (2004) finding relates to cognitive general empathy, cognitive victim-group empathy, or both, and whether it is generalisable to other groups aside from girls.

Two studies compared ASOs with NOs on a measure of the general tendency towards empathy. Monto et al. (1994) found no significant differences between the two groups. Perhaps not surprisingly, given that they used the same participants (with the addition of two participants to the ASO group and three to the NO group) (M. Monto, personal communication, September 26, 2015), Monto et al.'s (1998) more detailed analysis also found no significant relationship between empathy scores and ASO/NO status. The sample used for the main analysis in these studies was relatively large and well matched on age, but the construct validity of a four-item yes/no tool for measuring empathy is questionable and no information was provided about whether groups were matched on other potential confounding variables. Moreover, the ASO participants were again receiving sex offender treatment, which may have influenced their empathy scores.

3.2.2 General empathy: Evidence from ASO / NSO comparisons

Three studies were identified that compared ASOs with NSOs on measures of cognitive and/or affective general empathy. Using the IRI, Lindsey et al. (2001) compared ASOs with an NSO group drawn, like the ASOs, from a medium-security treatment facility. They found a significant difference between ASOs and NSOs on Empathic Concern scores (ASOs scoring lower), but no differences on the other IRI subscales. Also using the IRI, O'Halloran et al. (2002) compared ASOs with an NSO group of adolescents with behaviour difficulties attending outpatient mental health services. They found that ASOs scored significantly lower

than the NSOs on the Personal Distress scale but that there were no differences on the other IRI subscales.

Neither of these IRI studies found any difference in cognitive general empathy between ASO and NSO groups, although they did both find significant differences in components of affective general empathy, with ASOs scoring lower on Empathic Concern (Lindsey et al., 2001) and Personal Distress (O'Halloran et al., 2002). This might indicate that ASOs have lower affective general empathy than NSOs; however, the evidence from Netland and Miner (2012) contradicts this. Using a measure of affective general empathy (the lack of empathy scale in the MIDSA), Netland and Miner (2012) compared three sub-groups of ASO with an NSO group. They found that the different ASO sub-groups did not differ on empathy scores, but that each ASO sub-group showed higher levels of affective general empathy than the NSO group.

It is difficult to interpret these contradictory results. Potential confounding issues, such as small sample sizes and demographic differences between comparison groups, have already been discussed in relation to the ASO/NO general empathy comparisons undertaken by Lindsey et al. (2001) and O'Halloran et al. (2002). On one hand, some of these issues will also apply to these ASO and NSO comparisons; on the other, one might expect many sources of variability between ASO and NSO comparison groups to be minimised due to the fact that each group was made up of offenders. For example, Netland and Miner (2012) recruited all their participants from a wider study of child sexual abuse perpetration which drew its samples from residential and outpatient sex offender treatment programmes, juvenile probation departments, and juvenile detention centres, all of whom had attended offender treatment programmes (Miner et al., 2010). However, it is not clear how well each of their groups was matched on age, and it is also possible that a bias could have been introduced due

to the fact that their comparison groups were made up of volunteers from a wider sample (particularly as the proportions volunteering from each group appear to be different).

3.2.3 General empathy: Evidence from mixed comparisons

One study compared ASOs with a mixed group of NOs and adolescents with a history of emotional or behavioural maladjustment. Hunter and Figueredo (2000) measured these groups on a variety of different personality variables, including general empathy. Their analysis first involved the use of factor analysis to identify a range of hypothetical constructs underlying the correlations between the different personality variables across all their participants. They found that cognitive and emotional general empathy scales (as measured by HES and QMEE) loaded moderately onto a 'sexual maladjustment' factor (alongside scales from several other measures assessing unhealthy emotions and attitudes). Using structural equation modelling, they then developed a model of the factors predicting sexual offending. They found that the sexual maladjustment factor did not fit into this model, from which they concluded that adolescent child molesters do not differ from adolescent NSOs in terms of sexual maladjustment. However, because the loading of empathy scales onto the sexual maladjustment factor was only moderate, and the paper does not explain how the sexual maladjustment factor came to be removed from the structural model, this does not provide direct evidence about whether the groups differed in terms of empathy.

3.2.4 General empathy: Correlational evidence

Curwen's (2003) correlational design, using the IRI, found a positive relationship between the level of violence committed during a sexual offence (as rated by clinicians) and reported level of Perspective Taking and Empathic Concern (i.e., ASOs who committed a higher level of violence in their sexual offences reported more Perspective Taking and Empathic Concern). No relationship was found between level of violence and Personal Distress. This study included a large sample of ASOs (n = 123) and established a reasonable

level of inter-rater reliability for the level of violence ratings (r = .72, p < .01). However, the ASO sample consisted of participants who were in a community sex offender treatment programme, and it should also be noted that the level of violence ratings appear to measure the severity of verbal and physical coercion used during a sexual assault rather than the severity of the type of sexual assault (there may often be a correlation between the two, but not always).

Based on their analysis of background data for 33 ASOs (a sub-sample from their main study, discussed in section 3.2.1., above) Monto et al. (1998) found no significant relationship between general empathy scores and severity of offence, amount of force used or type of offence (penetrative/non-penetrative). However, in addition to the limitations discussed above, no information was provided about how the background data was extracted for the sub-sample analysis. Moreover, although this study attempted to control for the fact that the sub-sample ASOs were receiving sex offender treatment, 'time since the offence' was used as an indicator of time in treatment, rather than time in treatment itself.

3.2.5 Victim-group empathy

In addition to Farr et al.'s (2004) comparison of ASOs with NOs using the EGT (described in section 3.2.1.), two ASO/NO comparison studies were identified that explored aspects of cognitive and/or affective victim-group empathy; one of these also included an analysis of the correlation between victim-group empathy scores and number of victims. First, Whittaker et al. (2006) compared ASOs and NOs using two general sexual abuse victim vignettes from the VES and a slightly adapted questionnaire (combining questions about cognitive and affective victim-group empathy) and scoring system (which gave an acceptable alpha coefficient of 0.8). They found that the ASO group scored significantly higher than the NO group on the combined scores from both vignettes (meaning ASOs showed lower victim-group empathy) and on the scores from one of the vignettes but not on the other. Whittaker et

al. (2006) also found that the ASOs reported significantly more "don't knows" to the VES questions on both vignettes combined. In addition, they found no correlation between ASO total scores across the two vignettes and the number of victims abused. This study utilised a reasonable number of participants (ASO group n = 94, NO group n = 55) and was the only study in this review using a self-report psychometric tool that stated that the ASO group was assessed prior to treatment. Also, the NO group was recruited to have a similar socio-economic status and mean age to the wider ASO sample used in the study for other comparisons (although it is not clear how well the comparison group matched on age with the ASO sub-sample used for the empathy comparison as a separate age mean was not reported for this sub-sample). Second, Van Vugt et al. (2008) compared affective victim-group empathy of ASOs and NOs, using the adapted MOM. They found no significant differences between the groups on the affective empathy shown to victims in either general or sexual situations. However, the ASO and NO groups differed significantly in age, cultural background and socio-economic status, and it is possible that these may have been confounding factors. Moreover, the ASO group was recruited from a forensic treatment outpatient facility, and it is not clear whether they had received sex offender treatment or not.

In brief, even if Farr et al. (2004) is included, this review found results from only three victim-group empathy ASO/NO comparison studies. Compared to NOs, ASOs have been found to have lower cognitive victim-group empathy (Farr et al., 2004), lower combined cognitive/affective victim-group empathy (with no relationship between empathy score and number of victims) (Whittaker et al., 2006), and no differences in affective victim-group empathy (Van Vugt et al., 2008). Further research is required with pre-treatment ASOs to confirm and clarify these findings.

3.2.6 Victim-specific empathy

Smith and Monastersky (1986) undertook a follow-up study involving analysis of pre-treatment justice system records of 112 ASOs in order to assess whether empathy deficits predicted recidivism after a follow-up period ranging from 17-49 months (mean = 28.9 months; S.D. = 8.06 months). Using one item of a clinician-rated local juvenile sex offender programme protocol for assessing offenders ("Offender acknowledges and understands the negative impact of the offense on victim (empathy)"), they found there was no association between scores on this item and reoffending status (non-reoffending / non-sexual reoffending / sexual reoffending) (statistics not given). Hart-Kerkhoffs et al. (2009) undertook a follow-up analysis of the victim-specific empathy of ASOs using a clinician-rated empathy score ("Shows no / some / adequate empathy for the victim") from the GAIJSO, a tool developed in the Netherlands for use in clinical practice to evaluate sexual offence and offender characteristics. Using a logistic regression analysis of variables predicting recidivism at a follow-up period (mean = 30 months; S.D. 18 months), they found that for the sample as whole a lack of victim-specific empathy was found to be a predictor for violent recidivism, but not for sex offending. Both of these studies found no association between victim-specific empathy score and ASO recidivism. One reason for this might be that victim-specific empathy relates to a specific past victim, and would thus on the face of it seem to be the least likely type of empathy to generalise to future possible victims. Whatever the case, it is difficult to accept these studies' findings as the reliability and validity of the empathy measures used appear to be questionable.

4.0 DISCUSSION

4.1 Summary of findings

In this review, 16 studies were identified that examined the possible relationship between empathy and adolescent sexual offending, using correlational or comparison designs

to identify a statistically significant association or elevated conditional group probability between the two factors. Based on the evidence they provide, it remains unclear whether there is such a relationship. Of the three cross-sectional studies that undertook correlational analyses, one study (Curwen, 2003) found a positive relationship between aspects of cognitive and affective general empathy and severity of sexual violence, but the other two found no relationship between affective general empathy and severity of offence, amount of force used or type of offence (Monto et al.,1998), or between victim-group empathy and number of victims abused (Whittaker et al., 2006). Clearly, the cross-sectional correlational evidence is too limited for any conclusions to be drawn. With regard to the findings from cross-sectional comparison studies, the evidence does not suggest that ASOs differ from NOs in terms of affective general empathy. Furthermore, there is limited and contradictory evidence about whether ASOs differ from NSOs in this regard. Several studies have found evidence that ASOs may have lower cognitive general empathy than NOs, but other studies contradict this and no firm conclusions can be drawn due to methodological issues. There is no evidence that ASOs differ from NSOs in this type of empathy. Finally, two follow-up correlational studies were identified that found no evidence of an association between victim-specific empathy and sexual recidivism. However, because these studies used measures of questionable reliability and validity it is not possible to come to a firm conclusion on the question of whether ASOs are distinguished by victim-specific empathy deficits.

Taken as a whole, the current evidence base is inconclusive and characterised by weak and/or inconsistent findings. This is a result of both methodological issues and the fragmentary nature of the research. The methodological issues identified here mirror those identified by reviews of the wider ASO literature (e.g., Burton & Miner, 2017; Keelan & Fremouw, 2013; Seto & Lalumière, 2010; van Wijk et al., 2006), and include: the use of inappropriate measures (e.g., clinician ratings and psychometric tools that may not be

adequate in terms of reliability and validity or which may differ in their ability to assess empathy deficits); small participant numbers in sexual offender groups in some comparison studies; little consistency between studies in the age ranges of ASO groups; the use of participants in ASO groups who had attended sex offending behaviour programmes; and, in some studies, failure to control for age and other potential confounding factors between comparison groups.

Alongside these issues, the fragmentary nature of the research is a consequence of the heterogeneity of adolescent sexual offending (meaning that researchers have explored different sub-types of sexual offenders, such as offenders against younger children, peer, or adult victims, or both) and of the definitional problems surrounding the construct of empathy (meaning that researchers have focused on different aspects of cognitive and affective empathy, and on different constructs of general, victim-group and victim-specific empathy). This has meant that the number of studies focusing on the same subject matter is currently so limited that it is not possible to infer with any certainty which may reflect reality and which may not.

4.2 Recommendations for future research

Further research is clearly necessary, but where should it be focused?

As outlined in 1.2 above, for developmental reasons it seems likely that at least some of factors implicated in adolescent sexual offending are different to those that lead adults to offend. One such factor could be level of general (or 'trait') empathy. Therefore, moving forward, it would seem sensible to establish first whether ASOs possess general cognitive or affective empathy deficits. If this is not the case, it would then seem appropriate to explore whether any group-, situation-, or person- specific empathy deficits are displayed. Ideally, this research should attempt to establish an association or conditional probability between empathy and offending either by correlating empathy scores with recidivism or by comparing

ASOs with NSOs and NOs, using appropriate measures of general, victim-group and victim-specific empathy. ASOs are not homogenous (Keelan & Fremouw, 2013; Robertiello & Terry, 2007; van Wijk et al., 2006) and any link between empathy and sexual offending could be moderated or mediated by factors which theoretically may be specific to different ASO sub-types; hence sub-type samples, rather than mixed ASO samples, should be used where possible. Ideally, if an association between empathy deficits and adolescent sex offending was found, methods to establish temporal precedence and rule out alternative explanations should also be employed to establish whether the empathy deficits found do in fact increase risk of sexual offending (Haynes, O'Brien, Kaholokula, & Witteman, 2012). To better identify any 'blocks' to appropriate empathetic responding, it may also be helpful to assess them when they are most likely to be evident, perhaps during the precursor stage to offending (Pithers, 1999) and certainly prior to attending a sex offender treatment programme.

If empathy deficits are found, it would be important for researchers to explore the mechanisms involved, not least to inform the development of improved models of change (Day et al., 2010; Mann & Barnett, 2012). For example, if ASOs are found to have lower levels of cognitive or affective general empathy than comparison groups, research could then be undertaken to explore whether this was due to maturational delay in the development of relevant perspective-taking or affect-sharing processes and how that might have been caused. Alternatively, if victim-group or victim-specific empathy deficits are found in the absence of significant general empathy deficits, this would support the hypothesis that adolescent sexual offending involves the inhibition of empathy due to the kinds of psychological process described in 1.1 above. To explore this hypothesis further, the existence of such processes should be assessed alongside the assessment of the overall empathy deficit. A limited example of this (that happens, incidentally, to be consistent with Barnett and Mann's (2017) hypothesis that different factors may lead to 'blocking' of appropriate victim-group and

victim- or situational-specific empathetic responding), is provided by Varker and Devilly's (2007) study, which found evidence that ASOs displayed significantly greater empathy and fewer cognitive distortions for a general victim of sex abuse than for their own victim.

A comprehensive explanation for adolescent sexual offending is likely to be developmental (taking into account personality, cognitive and emotional development), multi-factorial (involving many potential individual, ecological and contextual risk factors), and transtheoretical (integrating elements of different theories such as strain theory, social learning theory, control theory, etc.) (Burton & Miner, 2017). It is important, therefore, for research about the relationship between empathy deficits and adolescent sexual offending to be integrated into wider explanations of this behaviour, and for treatments to be developed that take account of each individual's specific needs regarding their empathy deficits and other risk factors. These considerations mean that it is vital that further research in this area is methodologically sound. Although it will not be easy given the difficulties of access to ASO participants, attempts should be made to address the methodological issues identified here to ensure that individual study comparisons are appropriate and that the results of different studies can be compared.

4.3 Limitations and conclusion

This review has been able to provide a comprehensive overview of the evidence base and to signpost a way forward for future research. A broad literature search strategy using a wide range of descriptors for sexual offending behaviours and the adolescent age group was utilised, and we consider it likely that it obtained most, if not all, of the existing evidence base. However, it should be noted that the literature search may not have captured relevant studies not published in English. In addition, unpublished dissertation abstracts were excluded from the analysis. The search strategy identified four unpublished dissertations that would have met the inclusion criteria, all of which compared ASO general empathy with that

of adolescent NSOs or NOs using the IRI. Given the limitations of the current evidence base, an argument could have been made for including these in the review, particularly if they provided compelling new evidence. Of the four unpublished dissertations, three found no significant differences between ASOs and NSOs on the IRI subscales (D'Orazio, 2002; Flores, 2002; Reynolds, 1999), and the fourth found that ASOs had lower scores than NOs on the Perspective Taking sub-scale of the IRI but not on the Empathetic Concern or Personal Distress subscales (the Fantasy subscale was not assessed) (Lo, 2007), and it was concluded that they did not provide sufficient new evidence to alter the conclusions drawn in this review about ASO general empathy.

In summary, the current research evidence base in relation to empathy and adolescent sex offending is inadequate both in terms of its overall fragmentary nature and the methodological limitations of the studies that have been undertaken. As a result, it is not yet possible to say conclusively whether there is a relationship between the different types of empathy deficit and adolescent sex offending. Determining the existence and nature of any relationship will enable appropriate interventions to be developed, hence further systematic and methodologically-sound research is required.

REFERENCES

Augur Enterprises, Inc. (2011). *MIDSA clinical manual*. http://www.midsa.us. Accessed 13.11.15.

Barnett, G. D., & Mann, R. E. (2013). Empathy deficits and sexual offending: A model of obstacles to empathy. *Aggression and Violent Behavior, 18*, 228-239. doi: 10.1016/j.avb.2012.11.010

Barnett, G. D., & Mann, R. E. (2017). Theories of empathy deficits in sexual offenders. In A. R. Beech, & T. Ward (Eds.), *The Wiley Handbook on the Theories, Assessment, and Treatment of Sexual Offending, Volume 1: Theories* (pp. 223-244). Chichester: John Wiley & Sons.

Barbaree, H. E., & Marshall, W. L. (2006). An introduction to the juvenile sex offender: Terms, concepts, and definitions. In H. E. Barbaree, & W. L. Marshall (Eds.), *The juvenile sex offender* (2nd ed.) (pp. 1-18). New York: The Guilford Press.

Beckett, R., & Fisher, D. (1991). Victim Empathy Scale (Unpublished).

Beckett, R., & Fisher, D. (1994). *Assessing victim empathy: A new measure.* Paper presented at the 13th Annual Conference of the Association for the Treatment of Sexual Abusers, San Francisco.

Beech, A. R. (1998). A psychometric typology of child abusers. *International Journal of Offender & Comparative Criminology, 42*, 319-339. doi: 10.1177/0306624X9804200405

Brugman, D., Rutten, E. A., Stams, G. J. J. M., & Tavecchio, L. W. C. (2006). *Manual of the Moral Orientation Measure (MOM)*. Utrecht: Utrecht University.

Bryant, B. K. (1982). An index of empathy for children and adolescents. *Child Development, 53*, 413-425. doi: 10.2307/1128984

Burke, D. M. (2001). Empathy in sexually offending and nonoffending adolescent males. *Journal of Interpersonal Violence, 16,* 222-233. doi: 10.1177/088626001016003003

Burton, D., & Miner, M. (2017). Exploring the theories explaining male adolescent perpetration of sexual crimes. In A. R. Beech, & T. Ward (Eds.), *The Wiley Handbook on the Theories, Assessment, and Treatment of Sexual Offending, Volume 1: Theories* (pp. 497-518). Chichester: John Wiley & Sons.

Chlopan, B. E., McCain, M. L., Carbonell, J. L., & Hagen, R. L. (1985). Empathy: A review of available measures. *Journal of Personality and Social Psychology, 48,* 635-653. doi: 10.1037/0022-3514.48.3.635

Cohen, D., & Strayer, J. (1996). Empathy in conduct-disordered and comparison youth. *Developmental Psychology, 32,* 988-998. doi: 10.1037/0012-1649.32.6.988

Covell, C. N., & Scalora. M. J. (2002). Empathetic deficits in sexual offenders: An integration of affective, social, and cognitive constructs. *Aggression and Violent Behavior, 7,* 251-270. doi: 10.1016/S1359-1789(01)00046-5

Curwen, T. (2003). The importance of offense characteristics, victimization history, hostility, and social desirability in assessing empathy of male adolescent sex offenders. *Sexual Abuse: A Journal of Research and Treatment, 15*, 347-364. doi: 10.1023/A:1025056312935

Davis, M. H. (1980). A multidimensional approach to individual differences in empathy. *JSAS Catalog of Selected Documents in Psychology, 10,* 85.

Davis, M. H. (1983). The effects of dispositional empathy on emotional reactions and helping: A multidimensional approach. *Journal of Personality, 51*, 167-184. doi: 10.1111/j.1467-6494.1983.tb00860.x

Day, A., Casey, S., & Gerace, A. (2010). Interventions to improve empathy awareness in sexual and violent offenders: Conceptual, empirical, and clinical issues. *Aggression and Violent Behavior, 15*, 201-208. doi: 10.1016/j.avb.2009.12.003

DeVon, H. A., Block, M. E., Moyle-Wright, P., Ernst, D. M., Hayden, S. J., Lazzara, D. J., Savoy, S. M., & Kostas-Polston, E. (2007). A psychometric toolbox for testing validity and reliability. *Journal of Nursing Scholarship, 39*, 155-164. doi: 10.1111/j.1547-5069.2007.00161.x

Dillard, J. P., & Hunter, J. E. (1989). On the use and interpretation of the Emotional Empathy Scale, the Self-Consciousness Scales, and the Self-Monitoring Scale. *Communication Research, 16*, 104-129. doi: 10.1177/009365089016001005

D'Orazio, D. M. (2002). *A comparative analysis of empathy in sexually offending and non-offending juvenile and adult males* (Doctoral dissertation). Retrieved from Proquest Dissertations Publishing. (3104307)

D'Orazio, D. M. (2004). Letter to the editor. *Sexual Abuse: A Journal of Research and Treatment, 16*, 173-174. doi: 10.1023/B:SEBU.0000023169.51421.76

Farr, C., Brown, J., & Beckett, R. (2004). Ability to empathise and masculinity levels: Comparing male adolescent sex offenders with a normative sample of non-offending adolescents. *Psychology, Crime & Law, 10*, 155-167. doi: 10.1080/10683160310001597153

Federal Bureau of Investigation (2014). *Crime in the United States, 2014*. https://www.fbi.gov/about-us/cjis/ucr/crime-in-the-u.s/2014/crime-in-the-u.s.-2014/tables/table-39. Accessed 19.02.16.

Fernandez, Y. M., Marshall, W. L. (2003). Victim empathy, social self-esteem, and psychopathy in rapists. *Sexual Abuse: A Journal of Research and Treatment, 15*, 11-26. doi: 10.1023/A:1020611606754

Fernandez, Y. M., Marshall, W. L., Lightbody, S., & O'Sullivan, C. (1999). The child molester empathy measure: Description and examination of its reliability and validity. *Sexual Abuse: A Journal of Research and Treatment, 11*, 17-31. doi: 10.1023/A:1021376711828

Fleming, W. M., Jory, B., & Burton, D. L. (2002). Characteristics of juvenile offenders admitting to sexual activity with nonhuman animals. *Society and Animals, 10*, 31-45. doi: 10.1163/156853002760030860

Flores, G. T. (2002). *Empathy, cognitive distortions, and delinquent behaviors in adolescent male violent sex offenders and non-sex offenders* (Doctoral dissertation). Retrieved from Proquest Dissertations Publishing. (3062287)

Frick, P. J., & White, S. F. (2008). Research review: The importance of callous-unemotional traits for developmental models of aggressive and antisocial behavior. *The Journal of Child Psychology and Psychiatry, 49*, 359-375. doi: 10.1111/j.1469-7610.2007.01862.x

Froman, R. D., & Peloquin, S. M. (2001). Rethinking the use of the Hogan Empathy Scale: A critical psychometric analysis. *American Journal of Occupational Therapy, 55*, 566-572. doi: 10.5014/ajot.55.5.566

Hanson, R. K., & Bussière, M. T. (1998). Predicting relapse: A meta-analysis of sexual offender recidivism studies. *Journal of Consulting and Clinical Psychology, 66*, 348-362. doi: 10.1037/0022-006X.66.2.348

Hanson, R. K., & Morton-Bourgon, K. E. (2005). The characteristics of persistent sexual offenders: A meta-analysis of recidivism studies. *Journal of Consulting and Clinical Psychology, 73*, 1154-1163. doi: 10.1037/0022-006X.73.6.1154

Hanson, R. K., & Scott, H. (1995). Assessing perspective-taking among sexual offenders, nonsexual criminals, and nonoffenders. *Sexual Abuse: A Journal of Research and Treatment, 7*, 259-277. doi: 10.1007/BF02256831

Hart-Kerkhoffs, L. A., Doreleijers, T. A. H., Jansen, L. M. C., van Wijk, A. P. H., & Bullens, R. A. R. (2009). Offense related characteristics and psychosexual development of juvenile sex offenders. *Child and Adolescent Psychiatry and Mental Health, 3*. http://www.capmh.com/content/3/1/19. Accessed 21.08.15.

Hawk, S. T., Keijsers, L., Branje, S. J. T., Van der Graaff, J., de Wied, M., & Meeus, W. (2013). Examining the Interpersonal Reactivity Index (IRI) among early and late adolescents and their mothers. *Journal of Personality Assessment, 95*, 96-106. doi: 10.1080/00223891.2012.696080

Haynes, S. N., O'Brien, W. H., Kaholokula, J. K., & Witteman, C. (2012). Concepts of causality in psychopathology: Applications in clinical assessment, clinical case formulation and functional analysis. *Journal of Unified Psychotherapy and Clinical Science, 1*, 87-103.

Health Evidence Bulletins Wales (2004). Questions to assist with the critical appraisal of an observational study e.g., cohort, case-control, cross-sectional. http://hebw.cf.ac.uk/projectmethod/appendix8.htm. Accessed 27.10.15.

Hogan, R. (1969). Development of an empathy scale. *Journal of Consulting and Clinical Psychology, 33*, 307-316. doi: 10.1037/h0027580

Hunter, J. A., & Figueredo, A. J. (2000). The influence of personality and history of sexual victimization in the prediction of juvenile perpetrated child molestation. *Behavior Modification, 24*, 241-263. doi: 10.1177/0145445500242005

Jolliffe, D., & Farrington, D. P. (2004). Empathy and offending: A systematic review and meta-analysis. *Aggression and Violent Behavior, 9*, 441-476. doi: 10.1016/j.avb.2003.03.001

Jolliffe, D., & Farrington, D. P. (2006). Development and validation of the Basic Empathy Scale. *Journal of Adolescence, 29*, 589-611. doi: 10.1016/j.adolescence.2005.08.010

Kaplan, P. J., & Arbuthnot, J. (1985). Affective empathy and cognitive role-taking in delinquent and nondelinquent youth. *Adolescence, 20*, 323-333.

Keelan, C. M., & Fremouw, W. J. (2013). Child versus peer/adult offenders: A critical review of the juvenile sex offender literature. *Aggression and Violent Behavior, 18*, 732-744. doi: 10.1016/j.avb.2013.07.026

Knight, R. A., & Prentky, R. A. (1993). Exploring characteristics for classifying juvenile sex offenders. In H. E. Barbaree, W. L. Marshall, & S. M. Hudson (Eds.), *The juvenile sex offender* (1st ed.) (pp. 45-83). New York: The Guilford Press.

Lindsey, R. E., Carlozzi, A. F., & Eells, G. T. (2001). Differences in the dispositional empathy of juvenile sex offenders, non-sex-offending delinquent juveniles, and nondelinquent juveniles. *Journal of Interpersonal Violence, 16*, 510-522. doi: 10.1177/088626001016006002

Lo, Q. H. Y. (2007). *The relationship of self-compassion and self-esteem to empathy, shame, and social functioning in adolescents who offend sexually* (Doctoral dissertation). Proquest Dissertations Publishing. (NR39509)

Mann, R. E., & Barnett, G. D. (2012). Victim empathy intervention with sexual offenders: Rehabilitation, punishment, or correction quackery? *Sexual Abuse: A Journal of Research and Treatment, 25*, 282-301. doi: 10.1177/1079063212455669

Marshall, L. E. (2002). The development of empathy. In Y. Fernandez (Ed.), *In their shoes: Examining the issue of empathy and its place in the treatment of offenders* (pp.36-52). Oklahoma City: Wood 'N' Barnes Publishing.

Marshall, W. L., & Barbaree, H. E. (1990). An integrated theory of the etiology of sexual offending. In W. L. Marshall, D. R. Laws, & H. E. Barbaree (Eds.), *Handbook of sexual assault: Issues, theories, and treatment of the offender* (pp. 257-275). New York: Plenum Press.

Marshall, W. L, Hudson, S. M., Jones, R., & Fernandez, Y. M. (1995). Empathy in sex offenders. *Clinical Psychology Review, 15*, 99-113. doi: 10.1016/0272-7358(95)00002-7

Marshall, W. L., Marshall, L. E., Serran, G. A. (2009). Empathy and offending behaviour. In M. McMurran & R. C. Howard (Eds.), *Personality, personality disorder and violence* (pp. 229-244). Chichester: John Wiley & Sons.

Marshall, W. L., Marshall, L. E., Serran, G. A., & O'Brien, M. D. (2009). Self-esteem, shame, cognitive distortions and empathy in sexual offenders: Their integration and treatment implications. *Psychology, Crime & Law, 15*, 217-234. doi: 10.1080/10683160802190947

Mehrabian, A., & Epstein, N. (1972). A measure of emotional empathy. *Journal of Personality, 40*, 525-543. doi: 10.1111/j.1467-6494.1972.tb00078.x

Miller, P. A., & Eisenberg, N. (1988). The relation of empathy to aggressive and antisocial behaviour. *Psychological Bulletin, 103*, 24-344. doi: 10.1037/0033-2909.103.3.324

Miner, M., Robinson, B., Knight, R., Berg, D., Swinburne Romine, R. S., & Netland, J. D. (2010). Understanding sexual perpetration against children: Effects of

attachment style, interpersonal involvement, and hypersexuality. *Sexual Abuse: A Journal of Research and Treatment, 22*, 58-77. doi: 10.1177/1079063209353183

Ministry of Justice, Home Office & Office of National Statistics (2013). *An overview of sexual offending in England and Wales*. https://www.gov.uk/government/publications/an-overview-of-sexual-offending-in-england-and-wales. Accessed 14.08.14.

Monto, M., Zgourides, G., & Harris, R. (1998). Empathy, self-esteem, and the adolescent sexual offender. *Sexual Abuse: A Journal of Research and Treatment, 10*, 127-139. doi: 10.1023/A:1022019532573

Monto, M., Zgourides, G, Wilson, J., & Harris, R. (1994). Empathy and adolescent male sex-offenders. *Perceptual and Motor Skills, 79*, 1598.

Moriarty, N., Stough, C., Tidmarsh, P., Eger, D., & Dennison, S. (2001). Deficits in emotional intelligence underlying adolescent sex offending. *Journal of Adolescence, 24*, 743-51. doi: 10.1006/jado.2001.0441

Netland, J. D., & Miner, M. H. (2012). Psychopathy traits and parental dysfunction in sexual offending and general delinquent adolescent males. *Journal of Sexual Aggression, 18*, 4-22. doi: 10.1080/13552600.2011.632696

O'Halloran, M., Carr, A., O'Reilly, G., Sheerin, D., Cherry, J., Turner, R., Beckett, R., & Brown, S. (2002). Psychological profiles of sexually abusive adolescents in Ireland. *Child Abuse & Neglect, 26*, 349-370. doi: 10.1016/S0145-2134(02)00313-7

Pithers, W. D. (1994). Process evaluation of a group therapy component designed to enhance sex offenders' empathy for sexual abuse survivors. *Behaviour Research and Therapy, 32*, 565-570. doi: 10.1016/0005-7967(94)90146-5

Pithers, W. D. (1999). Empathy: Definition, enhancement and relevance to the treatment of sexual abusers. *Journal of Interpersonal Violence, 14*, 257-284. doi: 10.1177/088626099014003004

Reynolds, J. R. (1999). *A comparison of adolescent sexual offenders, adolescent violent offenders, and adolescent non-violent, non-sexual offenders along the domains of empathy, hostility, and rape myth endorsement* (Doctoral dissertation). Proquest Dissertations Publishing. (9946288)

Reitzel, L. R., & Carbonell, J. L. (2006). The effectiveness of sexual offender treatment for juveniles as measured by recidivism: A meta-analysis. *Sex Abuse, 18*, 401-421. doi: 10.1007/s11194-006-9031-2

Robertiello, G., & Terry, K. J. (2007). Can we profile sex offenders? A review of sex offender typologies. *Aggression and Violent Behavior*, 12, 508-518. doi: 10.1016/j.avb.2007.02.010

Seto, M. C., & Lalumière, M. L. (2010). What is so special about male adolescent sexual offending? A review and test of explanations through meta-analysis. *Psychological Bulletin, 136*, 526-575. doi: 10.1037/a0019700

Smallbone, S. W. (2006). Social and psychological factors in the development of delinquency and sexual deviance. In H. E. Barbaree, & W. L. Marshall (Eds.), *The juvenile sex offender* (2nd ed.) (pp. 105-127). New York: The Guilford Press.

Smith, W. R., & Monastersky, C. (1986). Assessing juvenile sexual offenders' risk for reoffending. *Criminal Justice and Behavior, 13*, 115-140. doi: 10.1177/0093854886013002001

Spaccarelli, S., Bowden, B., Coatsworth, J. D., & Kim, S. (1997). Psychosocial correlates of male sexual aggression in a chronic delinquent sample. Criminal Justice and Behavior, 24, 71-95. doi: 10.1177/0093854897024001005

Spinrad, T. L., & Eisenberg, N. (2014). Empathy and morality: A developmental psychology perspective. In H. L. Maibom (Ed.), *Empathy and Morality* (pp. 59-70). Oxford: Oxford University Press.

Stams, G. J. J. M., Deković, M., Brugman, D., Rutten, E. A., Van den Wittenboer, G. L. H., Tavecchio, L. W. C., Hendriks, J., & Van Schijndel (2008). The relationship of punishment- and victim-based moral orientation to prosocial, externalizing, and norm trespassing behaviour in delinquent and non-delinquent adolescents: A validation study of the Moral Orientation Measure. *Journal of Experimental Criminology, 4*, 41-60. doi: 10.1007/s11292-007-9045-x

Tierney, D. W., & McCabe, M. P. (2001). The assessment of denial, cognitive distortions, and victim empathy among pedophilic sex offenders. *Trauma, Violence, & Abuse, 2*, 259-270. doi: 10.1177/1524838001002003004

Tidefors, I., Goulding, A., & Arvidsson, H. (2011). A Swedish sample of 45 adolescent males who have sexually offended: Background, individual characteristics, and offending behaviour. *Nordic Psychology, 63*, 18-34. doi: 10.1027/1901-2276/a000043

Ward, T., & Durrant, R. (2014). Psychological altruism, empathy, and offender rehabilitation. In H. L. Maibom (Ed.), *Empathy and Morality* (pp. 210-229). Oxford: Oxford University Press.

van Langen, M. A. M., Wissink, I. B., van Vugt, E. S., Van der Stouwe, T., & Stams, G. J. J. M. (2014). The relation between empathy and offending: A meta-analysis. *Aggression and Violent Behavior, 19*, 179-189. doi: 10.1016/j.avb.2014.02.003

van Vugt, E., Stams, J. S., Deković, M., Brugman, D., Rutten, E., & Hendriks, J. (2008). Moral development of solo juvenile sex offenders. *Journal of Sexual Aggression, 14*, 99-109. doi: 10.1080/13552600802248106

van Wijk, A., Vermeiren, R., Loeber, R., Hart-Kerkhoffs, L., Doreleijers, T., & Bullens, R. (2006). Juvenile sex offenders compared to non-sex offenders: A review of the literature 1995-2005. *Trauma, Violence, & Abuse, 7*, 227-243. doi: 10.1177/1524838006292519

Varker, T., & Devilly, G. J. (2007). Types of empathy and adolescent sexual offenders. *Journal of Sexual Aggression, 13*, 139-149. doi: 10.1080/13552600701661573

Varker, T., Devilly, G. J., Ward, T., & Beech, A. R. (2008). Empathy and adolescent sexual offenders: A review of the literature. *Aggression and Violent Behavior, 13*, 251-260. doi: 10.1016/j.avb.2008.03.006

Ward, T., & Beech, A. (2006). An integrated theory of sexual offending. *Aggression and Violent Behavior, 11*, 44-63. doi: 10.1016/j.avb.2005.05.002

Whittaker, M. K., Brown, J., Beckett, R., & Gerhold, C. (2006). Sexual knowledge and empathy: A comparison of adolescent child molesters and non-offending adolescents. *Journal of Sexual Aggression, 12*, 143-154. doi: 10.1080/13552600600823621

Wijk, A. P., van Hart L. A., Doreleijers, T. A. H., & Bullens, R. A. R., (2005). *Ontwikkeling screeningsinstrument voor jeugdige zedendeqlinquenten*. Amsterdam: VUmc/VU.

Worling, J. R., & Långström, N. (2006). Risk of sexual recidivism in adolescents who offend sexually: correlates and assessment. In H. E. Barbaree, & W. L. Marshall (Eds.), *The juvenile sex offender* (2nd ed.) (pp. 219-247). New York: The Guilford Press.