**Review:**

**Aggressive behaviour in adults with learning disabilities**

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**Introduction**

Learning Disabilities (LD) are associated with impaired functioning in a number of specific areas such as language, cognitive and social skills (World Health Organisation, 1992). One of the notable difficulties experienced by those with a LD is what has been referred to as ‘Challenging Behaviour’ (CB). Challenging behaviours can be defined as: **“***behaviour of such intensity, frequency or duration that the physical safety of the person or others is likely to be placed in serious jeopardy, or behaviour which is likely to seriously limit or delay access to and use of ordinary community facilities”* (Emerson, Cummings, Barrett, Hughes, McCool & Toogood, 1988). One type of challenging behaviour which is commonly seen is aggression. There are a number of differences in definitions of aggressive behaviour in this context (See Cooper et al., 2009 for a discussion). For the purposes of this review three main categories of aggression will be discussed as defined by the Royal College of Psychiatrists (2001). These are ‘Physically aggressive behaviour’, ‘Destructive behaviour’, and ‘Verbally Aggressive behaviour’. Physically aggressive behaviour refers to using or threatening physical violence such as pushing, kicking or biting. Destructive behaviour refers to damage to property such as smashing furniture. Verbally aggressive behaviour refers to using “his or her voice in a violent or threatening manner” (RCP, 2001). This review aims to describe the psychological aspects of aggression in adults with LD, and how this can inform psychological interventions. This essay will take a challenging behaviour perspective on aggression; work on sexual aggression and with offenders in a forensic setting are another issue and the focus of other reviews (Craig & Hutchinson, 2005; Taylor, 2002).

**Prevalence of Aggression in Learning Disabilities**

Studies have demonstrated a high prevalence of aggressive behaviour in adults with LD. Cooper et al. (2009) found aggressive behaviour in 9.8% of adults with a LD at any one point in time. Crocker, Mercier, Lacahpelle, Brunet, Moring and Roy (2006) found that more than half had some form of aggression over the course of a year. The most common was verbal (37.6%), followed by physical aggression to others (24.4%) and property damage (24%, Crocker, et al., 2006). There is considerable overlap between different forms of aggression: when physical aggression, verbal aggression or destructive categories are used, around half have more than one type of aggression (Cooper, et al., 2009).

**Personal Risk Factors for Aggression**

Research has demonstrated a number of personal risk factors for aggression in LD. Aggression appears to be more common in men (Tyrer et al., 2006), and this is the case specifically for verbal aggression, physical aggression and property destruction (Crocker et al., 2006; Smith, Branford, Collacott, Cooper, & McGrother, 1996). However, other research suggests that women who are aggressive are more frequently aggressive than their male counterparts (Tenneij & Koot, 2008). In terms of age, those who are younger show more incidents of aggression (Tenneij & Koot, 2008; Tyrer et al., 2006). However this age difference may be more apparent for men than women (Crocker et al., 2006).

Aggressive behaviour appears to be more common with more severe LD (Crocker et al., 2006; Tyrer et al., 2006). Smith, Branford, Collacott, Cooper and McGrother (1996) found physical aggression to others in 3.9% of mild, 9.1% in moderate, 11% in severe, 17.4% in profound LD. Verbal aggression appears to be more common in mild to moderate LD whilst physical aggression and property destruction are more common in severe and profound LD (Cohen et al., 2010; Tsiouris, Kim, Brown, & Cohen, 2011). However some research has failed to find an effect of LD severity on the severity and frequency of aggression (Rojahn et al., 2012). Genetic syndromes may also be important: those with Down Syndrome have a lower likelihood of physical aggression (Tyrer et al., 2006), whilst Angelman Syndrome and Smith-Magenis Syndrome have the highest prevalence (Arron, Oliver, Moss, Berg, & Burbidge, 2011). Aggression also appears to be higher in those with autism (Cohen et al., 2010). Physical health problems increase the risk of challenging behaviour (de Winter, Jansen, & Evenhuis, 2011), though those who are more physically disabled are less likely to be aggressive (Emerson, et al., 2001). Dementia appears to increase the likelihood of aggression, at least in those with Down’s syndrome (Urv, Zigman, & Silverman, 2008).

Some research suggests no overall difference for aggression when those with and without mental illnesses are compared (Tenneij, Didden, Stolker, & Koot, 2009). However an increased likelihood of aggression has been shown in specific co-morbidities including Attention Deficit Hyperactivity Disorder (Cooper et al., 2009), mood disorders (Kishore, Nizamie, & Nizamie, 2005; Tenneij, et al., 2009; Tsiouris et al., 2011), psychosis (Tenneij, et al., 2009; Tsiouris, et al., 2011), anxiety and Obsessive Compulsive Disorder (Myrbakk & von Tetzchner, 2008) and personality disorders (Kishore et al., 2005; Tsiouris et al., 2011). The nature of causality in this relationship is however somewhat unclear, as there is also considerable overlap between the symptoms of CB and psychiatric problems in this population (Holden & Gitlesen, 2009). For example a client with poor communications skills who feels depresssed may use aggression as an attempt to communicate distress.

**Cognitive Aspects of Aggression**

Research has shown, primarily in those with a mild LD, that certain cognitions are related to aggression. Jahoda, Pert, Squire and Trower (1998) used a sentence completion task to demonstrate that those who were aggressive gave more aggressive responses to hypothetical scenarios. Those who weren’t aggressive generated more assertive solutions, suggesting that assertiveness training may be of benefit. However other research has suggested that those who are aggressive are actually better able to come up with assertive solutions (Pert, Jahoda & Squire, 1999), suggesting that assertiveness work may not be necessary for all. Those with aggression have been found to be more likely to attribute hostile intentions when presented with ambiguous situations (Jahoda, Pert, & Trower, 2006b; Pert et al., 1999). This suggests that psychological work for the client to develop alternative explanations may reduce the likelihood of an aggressive response. However, those with aggression are the same or better at correctly predicting hostile intention in unambiguously hostile situations (Jahoda, Pert, & Trower, 2006a; Pert et al., 1999). Thus it may be that the threshold for assuming hostile intent is very low, rather than there being an overall problem with intent attribution.

Deficit models of aggression in LD (Jahoda, Trower, Pert, & Finn, 2001) assume that problems with emotional and social understanding underlie aggression. However though work suggests some specific deficits, it may not be that global deficits are responsible. Pert et al. (1999) for example found that aggressive individuals were actually better at perspective taking, going against previous assumptions of global social deficits, and suggesting that work on empathy may not be helpful. Similarly other research has found that those who are aggressive do not differ in ability to label different emotions (Jahoda et al., 2006b). Research with a small sample size suggested poorer social skills in those with CB (Kearney & Healy, 2011), however it is unclear whether this is the case for aggression specifically. It may be that there are no clear global deficits, thus social skills, attributions and assertiveness skills should form the part of any assessment for aggression, and be placed within a psychological formulation where appropriate. Work on problem solving skills has also been advocated as beneficial regardless of which specific deficits exist (Jahoda et al., 1998; Jahoda et al., 2006b).

**The relationship between Anger and Aggression**

Historically, research on aggression has neglected the role of anger. Taylor and Novaco (2005) point out that research on aggression in LD has focused heavily on the CB aspect of this and environmental triggers, and neglected the role of an individual’s emotions. Research has begun to demonstrate a relationship in this population. For example Baker and Bramston (1997) found that in those with mild LD, anger correlated with both verbal and physical aggression. Similarly Novaco and Taylor (2004) found that self-reported anger correlated with assaults in an LD forensic setting.

Anger management interventions, primarily in group form using a Cognitive Behavioural approach have been developed for this population and have shown promising findings. The Anger Management Training Package (Gulbenkoglu, 2002) has been developed for use with a range of cognitive and communication abilities. The content is designed to apply specifically to those with a LD: pictures and symbols are used and relaxation techniques such as progressive muscle relaxation and imagery are appropriately modified. Twelve weekly sessions of this intervention was found to improve scores on the Novaco Anger Scale (Novaco, 2003), and this was maintained at 4 months (Hagiliassis, Gulbenkoglu, Di Marco, Young, & Hudson, 2005). Howells, Rogers and Wilcock (2000) developed a group based on a socio-cognitive model of anger, in particular problems labelling emotions, hostile attribution bias, and the belief that aggression is an acceptable response. Warning signals, cognitive aspects and alternative thoughts, assertiveness skills and social problem solving were also included. Role plays were used as part of this and those of lower ability were given additional individual sessions. A case series of five participants showed improvements in anger control (Howells, Rogers & Wilcock, 2000).

These anger interventions appear to reduce aggression: Lindsay et al. (2004) found that nine months after completion 14% of those in an anger group had been aggressive, compared to 45% of those in control. There is debate about which specific components of these interventions are effective. A number have included cognitive elements, but anecdotal evidence suggests that few clients understand this aspect (Willner, Jones, Tams, & Green, 2002). In addition it may be that work on relaxation strategies alone can improve both anger (Whitaker, 2001), and aggression (To & Chan, 2000).

Some groups have invited staff or carers to such groups, and this appears to improve outcomes (Rose, 2010; Rose et al., 2005). Factors which appear to reduce the effectiveness of anger management for those with LD include poor nonverbal reasoning (Hagiliassis et al., 2005). Some studies have found an effect of receptive vocabulary (Rose et al., 2005), whilst others have not (Hagiliassis et al., 2005). Lower Full Scale and Verbal Intelligence Quotient (IQ) scores also appear to reduce improvements (Willner et al., 2002). A regression analysis by the authors suggested that those with a verbal IQ below 50 would not benefit from attending an anger management group (Willner et al., 2002).

**Working with Staff views about Challenging Behaviour**

Staff who work in LD settings are frequently exposed to aggression. Hensel, Lunsky and Dewa (2012) found that 96% of staff were exposed to aggression over 6 months and 25% had been exposed every day. Kiely and Pankhurst (1998) found that 81% of staff in a National Health Service LD team had experienced aggression towards themselves over the past year. Such exposure to aggression predicts burnout (Hensel et al., 2012), in particular if staff have strong emotional reactions (Mitchell & Hastings, 2001; Rose, Horne, Rose, & Hastings, 2004). It has been suggested that these emotional reactions by staff may prevent appropriate responses, and thus may inadvertently maintain CB (Zijlmans, Embregts, Gerits, Bosman, & Derksen, 2011). Thus any formulation and intervention for aggression needs to consider staff views of aggression. A number of measures have been developed which can be used to assess staff beliefs about aggression. The ‘Challenging Behaviour Attributions Scale’ (Hastings, 1997) has subscales such as emotional, stimulation and physical environment. The ‘Controllability Beliefs Scale’ (Dagnan, Grant, & McDonnell, 2004) similarly measures how much staff believe a client is in control of their CB.

A number of authors have begun to develop training interventions for staff to change beliefs about aggression. Allen and Tynan (2000) for example educated staff on risk factors for aggression, models, prevention and the role of attention, finding this significantly improved staff confidence. Other training approaches include training in emotional intelligence (Zijlmans et al., 2011), and teaching mindfulness skills and applying these to working with CB (Singh et al., 2006). Such training has been found to increase knowledge about CB (McDonnell et al., 2008; McGill, Bradshaw, & Hughes, 2007), increase confidence in coping (Baker & Bissmire, 2000; McDonnell, 1997; McDonnell, et al., 2008) and reduce negative emotional responses (McGill et al., 2007). Some research has suggested that training alters beliefs so that there is a greater focus on behavioural factors (McGill et al., 2007), however other research has found no such effect (McDonnell et al., 2008; Tierney, Quinlan, & Hastings, 2007). It is also unclear whether these improvements have a consequent effect on aggression: Baker and Bissmire (2000) found no effect on the number of incidents of aggression. However Allen, McDonald, Dunn and Doyle (1997) noted a reduction in incidents where physical restraint was needed. Similarly Singh et al. (2006) found that mindfulness training led to fewer incidents of aggression and less use of physical restraint by staff.

**The Function of Aggression**

Functional analysis aims to use a range of methods such as interviews and observation to identify the function or purpose of a particular behaviour (Ball, Bush, & Emerson, 2004). The experimental functional analysis literature on aggression in adults with LD has identified a number of such functions. Tenneij & Koot (2008) found that 48% incidents of aggression occurred when the client was denied something. Negative interactions with staff and difficulties with tasks and daily routines are often triggers in particular for women and those with more severe LD (Embregts, Didden, Huitink, & Schreuder, 2009). Specific antecedents include tasks being too difficult, a new task, instructions being given too fast, a lack of schedule to a day, noisy environments, and new staff (Embregts et al., 2009). These environmental antecedents can therefore be altered to reduce the frequency of aggression.

Attention, escape and getting something which is desired (tangible) are common functions (Dawson, Matson, & Cherry, 1998; Matson, Bamburg, Cherry, & Paclawskyj, 1999; Matson & Mayville, 2001). However there is often more than one function of aggression (Matson & Mayville, 2001), and the function of the same behaviour may change over time (Lerman, Iwata, Smith, Zarcone, & Vollmer, 1994). Life events such as bereavement, moving or staff changes are also related to aggression (Owen et al., 2004). Aggression can also be viewed as a form of communication in some contexts, as poor language ability is related to aggression (Moss et al., 2000). Aggression may also be sensory in nature (May, 2011). Scales such as the Questions about Behaviour Function Scale (Paclawskyj, Matson, Rush, Smalls, & Vollmer, 2000), Contextual Assessment Inventory (McAtee et al., 2004), and Motivational Assessment Scale (Durand, 1992) can be used to identify the potential functions of CB. However, inter-rater reliability for the Motivation Assessment Scale for aggression may be low (Sigafoos, Kerr, & Roberts, 1994). Identifying the function of aggression can help inform subsequent psychological formulation and intervention. Such functional assessments have also been found to improve outcomes: Matson, Bamburg, Cherry & Paclawskyj (1999) found that interventions based on functional analysis reduced aggression by 59%, compared to only 19% for more generic interventions.

**Specific Interventions for Aggressive Behaviour**

Behavioural interventions have been shown to be effective for reducing aggression, in particular if they are based on the results of a functional assessment (Didden, Korzilius, van Oorsouw, & Sturmey, 2006). Differential reinforcement appears to reduce CB, in particular differential reinforcement for alternate behaviour, whereby a different non-challenging behaviour is reinforced (Chowdhury & Benson, 2011). Differential reinforcement for incompatible behaviour reinforces non challenging behaviours which are incompatible with the CB. For example for someone who is verbally aggressive, polite conversation can be reinforced. Noncontingent reinforcement of replacement behaviours is also commonly used (Matson et al., 2011), as is controlling antecedents to aggression and extinction methods (Didden et al., 2006). However aversive or punishment strategies are less commonly used (Didden et al., 2006), and their use brings up as number of ethical issues so should be used with caution (Ball et al., 2004). Positive behavioural support aims to change environmental conditions and behaviour routines which have been identified using functional analysis (Lavigna & Willis, 2005). There is little research on the use of this approach with aggression specifically, though a small case series showed reductions in CB and improved quality of life (McClean, Grey, & McCracken, 2007).

Person centred active support interventions have been found to reduce CB, but it is unclear whether this improves aggression specifically (Beadle-Brown, Hutchinson, & Whelton, 2012). Person focused training has been used whereby staff are trained and supported in conducting their own function assessment and designing positive behavioural support plans. McClean et al. (2005) found 75% of such plans reduced physical aggression and 74% reduced verbal aggression. Finally case studies have demonstrated that teaching clients mindfulness techniques may help reduce aggression (Singh et al., 2007; Singh, Wahler, Adkins, & Myers, 2003). Specifically Singh et al. (2003) used a single simplified mindfulness technique whereby a client practised focusing on the soles of their feet when they started to feel angry. A year after the intervention there had been no incidents of aggression for this individual (Singh et al., 2003).

**Conclusion**

Aggressive behaviour is common in adults with learning disabilities, and there are a number of psychological aspects of this behaviour which can be targeted for intervention. Cognitive components such as hostile attribution bias appear to maintain aggression, and so psychological interventions may be beneficial. Anger management groups appear to improve anger and may consequently reduce aggression. Staff views about the causes of CB are important to take into account, and training on the causes of aggression may be helpful. A number of different functions such as attention may be driving aggression, and these are important to assess in order to identify potential targets for intervention. Finally, behavioural interventions, specifically those based on differential reinforcement can be used to prevent aggression being reinforced. Techniques such as mindfulness may also be useful, but further research is required. Multifaceted thinking is necessary when assessing, formulating and intervening with aggression in this client group, as a number of different psychological mechanisms may be involved.

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