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# Research in Developmental Disabilities



## Prevalence and risk factors of inpatient aggression by adults with intellectual disabilities and severe challenging behaviour: A long-term prospective study in two Dutch treatment facilities



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### ABSTRACT

Over five years, various types of aggressive incidents by 421 intellectually disabled inpatients were recorded on a daily basis, using an adapted version of the Modified Overt Aggression Scale. Stable patient characteristics (e.g., gender, intelligence, DSM IV classification at the start of treatment) and pre-treatment scores of two treatment outcome measures (e.g., Adult Behavior Checklist and Dynamic Risk Outcome Scale) were used to predict aggression during the treatment. At an overall average of one incident per patient per week, about ten times more aggression occurred on admission compared to resocialisation wards, and the 20% most aggressive individuals caused 50% of the verbal and 80% of the physical incidents. The best predictor of aggressive behaviour was aggression early in treatment, followed by coping skills deficits and impulsiveness. The relevance of the results for the treatment of aggressive behaviour and methodological issues in the recording of inpatient aggression are discussed.

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## 1. Introduction

Aggressive behaviour by adults with intellectual disability (ID) has been a recognized problem for some time (Matson & Gorman-Smith, 1986), and has increasingly become a subject of research. Prevalence rates for aggressive behaviour differ considerably across studies (for a review, see Cooper et al., 2009), and must be interpreted with caution due to methodological inconsistencies (Crocker et al., 2006). Population studies in several countries indicate that aggression is more prevalent in residential than community settings (Crocker et al., 2006; Sigafos, Elkins, Kerr, & Attwood, 1994; Tyrer et al., 2006). This difference may be explained by a double selection effect at the front-door and at the back-door of residential ID facilities. As Puddicombe and Lunskey (2007) put it, “aggression is the main ticket into hospital and the main barrier to getting out” (p. 192). In support of the front-door selection, Tenneij, Didden, Stolker, and Koot (2009) reported that 81% of the patients in Dutch treatment facilities for people with mild or borderline ID were referred because of aggressive behaviour. Likewise, Cowley, Newton, Sturmey, Bouras, and Holt (2005) found aggressive behaviour to be among the most important reasons for admission of people with ID to inpatient facilities. That aggression is a main barrier to resocialisation seems plausible (e.g. Cooper et al., 2009; Crocker et al., 2006; Tenneij & Koot, 2008) but remains to be supported empirically.

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Compared to other areas of health care, especially acute psychiatry (e.g., Abderhalden et al., 2007; Bowers, Allan, Simpson, Jones, & van der Merwe, 2009), little is known about the prevalence of inpatient aggression in the ID field. In four Dutch treatment centres for adults with mild ID and severe challenging behaviour, Tenneij and Koot (2008) found about 0.15 incidents of outwardly directed aggression and 0.06 auto-aggressive incidents per occupied bed per week. About 50% of the patients caused at least one, 33% more than one, and 8% more than ten incidents of outwardly directed aggression within 20 weeks. About 60% of the outwardly aggressive patients had caused physical pain or more serious harm at least once (Tenneij et al., 2009). In a similar treatment facility in the UK, Reed, Russell, Xenitidis, and Murphy (2004) found much higher aggression rates, with 0.49 incidents of physical aggression, 0.11 of aggression towards objects, and 0.03 of auto-aggression per patient per week. Several studies provide more global information about inpatient aggression. McMillan, Hastings, and Coldwell (2004) found that almost half of the patients in a forensic ID hospital committed physical aggression within 6 months, with a median number of 2 incidents. Linaker (1994) reported that, during 12 months, a third of the residents in an adult ID institution had assaulted others at least once.

It is tempting to look for explanations for the varying prevalence figures across studies, such as differences between populations, organizational, cultural, and other contextual factors. However, as the brief review highlights, there are inconsistencies in the reporting of inpatient aggression, which make comparisons across studies difficult. First, while some authors count aggressive incidents per bed during a particular time-period (Reed et al., 2004; Tenneij & Koot, 2008), others report percentages of aggressive individuals (Embregts, Didden, Huitink, & Schreuder, 2009; Linaker, 1994; McMillan et al., 2004; Tenneij & Koot, 2008). Because numbers of incidents cannot be derived from percentages of aggressive patients, and vice versa, both, incident-based and patient-based figures are required for a concise picture of the aggression in the facility and for comparisons among studies. Second, because patient-based aggression figures depend on the recording period, percentages of patients who caused incidents within six months and twelve months (e.g., Linaker, 1994; McMillan et al., 2004) cannot be compared. Third, especially undermining for comparisons across studies is the aggregation of different types of aggression in broad categories. For example, Tenneij and Koot (2008) combined physical aggression, aggression against property, and verbal aggression into 'outwardly directed aggression'. Consequently, a comparison with the figures by Reed et al. (2004), who reported figures for physical aggression and aggression against property but omitted verbal aggression, is impossible. Meaningful comparisons require separate figures for each type of aggression.

Knowing the distinguishing characteristics of individuals who display a lot of aggression would help to improve the treatment as well as the assessment and management of risk. Unfortunately, the empirical evidence is inconclusive. For example, gender was unrelated to outwardly directed aggression in most studies (Crocker et al., 2006; Hemmings, Gravestock, Pickard, & Bouras, 2006; Linaker, 1994; McMillan et al., 2004; Tenneij et al., 2009) but several studies found higher rates for males (McClintock, Hall, & Oliver, 2003; Tsiouris, Kim, Brown, & Cohen, 2011; Tyrer et al., 2006). This inconsistency cannot entirely be attributed to a selection effect in clinical populations because it also applies to population studies (Crocker et al., 2006; Tsiouris et al., 2011; Tyrer et al., 2006). Results were also inconclusive for level of intellectual disability and age. While Tyrer et al. (2006) and Crocker et al. (2006) reported more physical aggression among individuals with severe or profound compared to mild or moderate ID, McMillan et al. (2004) found no such difference. Likewise, younger adults with ID exhibited more aggression than older adults in some (Tenneij & Koot, 2008; Tsiouris et al., 2011; Tyrer et al., 2006) but not all studies (Crocker et al., 2006; Hemmings et al., 2006; McMillan et al., 2004; Tenneij et al., 2009). There is more agreement among studies concerning the role of psychopathology. Positive relationships with aggression were found for psychotic disorders (Linaker, 1994; Tsiouris et al., 2011), autism (McClintock et al., 2003; Tsiouris et al., 2011; Tyrer et al., 2006), personality disorders (Linaker, 1994; Tsiouris et al., 2011), impulse control disorders, and mood disorders (Tsiouris et al., 2011).

Most interesting from a clinical point of view are dynamic risk factors which may constitute targets for treatment. A promising variable is a tendency towards interpreting benign or ambiguous social cues as hostile, known as hostile attributional bias (Dodge, Bates, & Pettit, 1990). This bias is more common among adults with ID who display a lot of aggression (Basquill, Nezu, Nezu, & Klein, 2004; Jahoda, Pert, & Trower, 2006). Another interesting variable is social problem solving. In research with ID populations, aggressive individuals were found to generate more aggressive solutions to social problems than non-aggressive individuals (Van Nieuwenhuizen, Orobio de Castro, van Aken, & Matthys, 2009) and fail to identify consequences of the solutions (Basquill et al., 2004). Because not anticipating consequences of behaviour is a feature of impulsivity, it is not surprising that, among children with ID, aggressive behaviour was found to be associated with impulse control deficits, that is, the tendency to handle problematic situations by immediately showing feelings, needs and impulses (Van Nieuwenhuijzen et al., 2009).

The purpose of this study is, first, to add to the knowledge about prevalence and risk factors of aggression by individuals with mild or borderline ID in inpatient treatment settings, and second, to present a method for recording inpatient aggression, which places little administrative burden on ward staff, provides clinically useful data, requires little maintenance efforts, and thus, is suited for long-term recording of aggression.

## 2. Method

### 2.1. Setting and participants

In The Netherlands (about 16 million inhabitants), a central indication office determines the intensity of services for people with ID. The highest level of service intensity, i.e. long-term residential treatment, is assigned to about 500

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