



The age related prevalence of aggression and self-injury in persons with an intellectual disability: A review

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ABSTRACT

The aim of this study was to analyse statistically published data regarding the age related prevalence of aggression and self-injury in persons with intellectual disability. Studies including prevalence data for aggression and/or self-injury broken down by age band were identified and relative risk analyses conducted to generate indices of age related change. Despite conflicting results, the analysis conducted on included studies considered to be the most methodologically robust indicated that the relative risk of self-injury, and to a lesser extent aggression, increased with age until mid-adulthood, with some indication of a curvilinear relationship for self-injury. These conclusions have implications for the understanding of the development of different forms of challenging behaviour and the importance of early intervention strategies.

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1. Introduction

Research indicates a range in prevalence for challenging behaviours, such as self-injury and aggression, of 10–20% of all people with intellectual disability (Emerson & Bromley, 1995; Emerson et al., 2001; Kiernan & Qureshi, 1993; Lowe et al., 2007). Similar prevalence rates of between 10 and 15% for self-injury have been reported (Ando & Yoshimura, 1978; Ballinger, 1971; Borthwick-Duffy, 1994; Eyman & Call, 1977; Jacobson, 1982; Kebbon & Windahl, 1986; Oliver, Murphy, & Corbett, 1987; Saloviita, 2000). The range of prevalence rates for aggression appears to be slightly larger with estimates of between 2 and 20% (Cooper et al., 2009; Cooper, 1998; Crocker et al., 2006; Harris, 1993; Sigafos, Elkins, Kerr, & Attwood, 1994).

There have been few statistical analyses of age differences in prevalence rates of challenging behaviour. Several methodologically robust studies report an increase in challenging behaviour with age. More specifically, a small number of studies indicate an increase in prevalence until the mid-30s followed by decline (e.g. Kiernan & Kiernan, 1994; Oliver et al., 1987). Many researchers however, have failed to identify any association between age and challenging behaviour (e.g. Fraser, Leudar, Gray, & Campbell, 1986; Hillery & Mulcahy, 1997) whilst others report age related changes in the prevalence of challenging behaviour but are imprecise with regard to the age at which the prevalence begins to change (Collacott, Cooper, Branford, & McGrother, 1998; Hemmings, Gravestock, Pickard, & Bouras, 2006; Kiernan & Alborz, 1996; Maisto, Baumeister, & Maisto, 1978).

Disparity in general and age related prevalence might result from the divergent methodologies and samples employed. For example, the prevalence of challenging behaviour is likely to depend on the form of the behaviour and definition. The

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criterion for the presence of behaviour also has a significant effect, so that the age related prevalence of severe self-injury causing tissue damage will be different than that for milder self-injury. Additionally, the size and origin of the sample will influence results so that, for example, prevalence of challenging behaviour is likely to be higher in a sample of participants recruited from institutions where individuals are referred as a result of challenging behaviour (e.g. Emerson et al., 2001).

Establishing the prevalence of challenging behaviour with age might inform models of the development of the behaviour. Whilst both biological and operant processes have been implicated in the development of challenging behaviour (Oliver, 1993), the ontogeny of specific forms of challenging behaviour are not well understood. Guess and Carr's (1991) stage model indicates that self-injury emerges from repetitive behaviour, thus this behaviour is proposed to have a specific developmental trajectory. However, very little research has been devoted to the development of other forms of challenging behaviour. From a clinical perspective, being aware of age related changes in the prevalence of challenging behaviour would not only enable services to plan effectively for the future needs of children with intellectual disabilities, but could potentially help services to target early intervention at different age bands before the prevalence of challenging behaviour begins to increase. There are therefore, advantages to further investigating the prevalence of challenging behaviour with age.

The aim of this study was to review and analyse published data regarding the age related prevalence of aggression and self-injury in persons with intellectual disability. These specific forms of challenging behaviour were reviewed due to their clinical significance and, generally, well defined nature. To generate an accurate review, the inclusion criteria for all studies included the provision of prevalence of aggression and/or self-injury by age band data *in addition to* the number of participants in each age band so that these data could be analysed statistically within each study (statistical differences in data across studies were not analysed, although these data were compared using visual analysis). Whilst this inevitably limited the number of studies included, this also enabled a robust assessment of the consistency of the data across studies with different sample sizes and methodologies and thus extended the findings of previous studies. When interpreting the results, the focus was on papers with a more robust methodology, including a larger, more representative sample with use of standardised measures with established psychometric properties.

Several frequently cited articles include data on the prevalence of aggression and/or self-injury by age band, but do not report the number of participants in each age band and thus could not be included within this review. Although these studies cannot be included in this review, the trends are worth noting. Oliver et al. (1987) and Borthwick-Duffy (1994) report the highest prevalence of self-injurious behaviour to be in the teenage years, whilst the highest prevalence rate reported by Rojahn (1986) was in those in their mid-20s. Conversely, Griffin et al. (1987) reported a decrease in the prevalence of self-injury in 14–22 year olds compared to younger individuals aged 4–14 years. With regard to aggression, Borthwick-Duffy reported a slight increase in prevalence after the age of 20, although this difference is not analysed statistically. Conclusions drawn from comparisons between the results of different studies should be tentative as statistical significance of age related change in prevalence within studies is not evaluated. Nevertheless, these results do provide an indication of the trends demonstrated by published results not meeting criteria for inclusion in this study and allude to the need for a review.

2. Methods

2.1. Search criteria

Peer reviewed published articles reporting prevalence data for aggressive (must include physical aggression and not verbal aggression or property destruction only) and self-injurious (defined as behaviour causing potential harm to self) behaviour by age band between 1967 and April 2009 were identified by a literature search using the search engine PsycINFO[®]. Table 1 lists the search terms that were employed. Both Standard English and American spellings were included.

Search terms related to challenging behaviour were included to ensure no data regarding aggression or self-injury reported as a subclass of challenging behaviour were overlooked. 'Intellectual disability' and variations of this term were included to limit the data reviewed to this population. The reference lists of all identified papers were also inspected to identify omissions.

The inclusion criteria for studies were that they contained prevalence of aggression and/or self-injury (of all severities but not general challenging behaviour) by age band data for individuals with intellectual disability (mild to profound) as well as the number of participants in each age band so that the necessary raw data were available for statistical analysis. Studies were excluded if they contained data regarding highly specific populations, such as participants recruited solely from

Table 1

Terms employed in the literature search for studies reporting the prevalence of aggressive and self-injurious behaviour by age band.

Search term	Variations
Aggression	Aggressive behavior*
Self-injury	Self-injurious behavior*, self-destruction, self-mutilation, auto mutilation
Challenging behavior*	Maladaptive behavior*, abnormal behavior*, problem behavior*, aberrant behavior*, externalising behavior*, behavior* disorder
Intellectual disability	Learning disability, mental retardat*, mental handicap*, developmental disability*
Age	Longitudinal, cross section*, prevalence, rate, time, ageing, old

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