

Clinical management of aggression in people with intellectual disability or autism spectrum disorder in formal care settings: a state-of-the-art review

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Received 16 January 2025

Revised 6 April 2025

Accepted 7 April 2025

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Funding: Social Sciences and Humanities Research Council of Canada: 872-2022-1016.

Abstract

Purpose – *This study is a part of a larger project aimed at reviewing clinical, care and managerial practices for people with intellectual disability or autism spectrum disorders (ID/ASD) and challenging behavior resulting in violence or aggression. The purpose of this study is to conduct a state-of-the-art review of interventions aimed at preventing and managing aggression in individuals with ID/ASD in formal care settings.*

Design/methodology/approach – *A systematic literature search was conducted on January 24th, 2024, focusing on three main concepts: "intellectual disabilities/autism spectrum disorders," "aggressive behaviour" and "specialized services." Four reference databases were searched. Two independent reviewers selected studies and conducted data extraction. References were categorized by major themes, with data extraction and narrative synthesis performed for each theme.*

Findings – *This paper found that the number of publications on this theme has gradually diminished over the past 30 years. The number of publications on psychosocial interventions increased, while those pertaining to pharmacological approaches decreased. In the former, studies on staff training have increasingly supplanted interventions directly targeting individuals with ID/ASD. Small, uncontrolled studies reported some efficacy for aggression management interventions, while controlled trials generally found no significant effects. Several authors emphasized the primary role of environmental factors in controlling aggression among individuals with ID/ASD.*

Research limitations/implications – *The selection of literature in a unique pool without creating a separate search equation for each subsection of the study. It may cause the omission of important publications in the field. It does not allow for a complete picture of evaluated interventions for the prevention and management of violent behaviors in individuals with ID/ASD. However, it allows us to trace the evolution of discussions on the topic. In addition, a formal evaluation of the methodological quality of the included studies was not conducted.*

Practical implications – *This review may inform researchers and practitioners about the current state of matters in clinical intervention for aggressive behavior in adults with ID/ASD.*

Originality/value – *To the best of the authors' knowledge, this is the first review taking a historical perspective in analyzing the development of approaches for dealing with aggressive behavior in adults with ID/ASD in formal settings. This perspective enables considering past unproductive paths and inspires the development of new approaches.*

Keywords *Intellectual disability, Autism spectrum disorder, Aggression, Violence, Pharmacological intervention, Psychosocial intervention, Formal care, State-of-the-art review*

Paper type *Literature review*

Introduction

While aggressive behavior is not rare in adults with an intellectual disability or autism spectrum disorders (ID/ASD), its severe forms (e.g. physical violence and objects

destruction) are observed only in a small fraction (about 5%) of this population (Crocker *et al.*, 2006). In these cases, care demands skills and efforts beyond the informal carers' capacities (McConkey, 2024). Thus, people with ID/ASD who display severe aggressive behavior may be placed in formal care settings (Modi *et al.*, 2015). These include settings outside family home, such as long-term care hospital units, long-term care facilities and group homes. These facilities are designed to provide secure, structured environments, tailored care and interventions supposed to prevent violent outbursts (Dubé, 2016). Nevertheless, approximately 40% of service users exhibit aggressive behaviors even in formal settings (Tenneij and Koot, 2008). Around 20% of them display aggression on a monthly basis, while another 20% experience weekly or even daily outbursts (Saloviita, 2002). Moderate (15%) and severe aggression (15%) account for a significant proportion of these incidents (Smith *et al.*, 2022). Outwardly directed aggression accounts for about 73% of all incidents. Staff members are most often (70%) the victims of aggression, followed by peer-service users (10%) and visitors (5%). Aggression may also be directed at objects or self [30% (Tenneij and Koot, 2008)]. The consequences of these actions affect not only the immediate victims but also witnesses, the authors of aggression themselves and the institution as a whole.

Service users who are exposed to aggressive outbursts, whether directly targeted or inadvertently present, may feel unsafe or threatened (Tenneij and Koot, 2008). Staff members exposed to or witnessing aggression experience psychological distress and physical injuries, which can erode their coping capacity, lead to burnout, reduce job satisfaction and negatively impact health and relationships outside of work (Newman *et al.*, 2021). Authors of aggression also face consequences: from psychological trauma or physical injuries resulting from restrictive measures to legal consequences (Alexander *et al.*, 2015; Haines-Delmont *et al.*, 2022; Sanders, 2009; Sequeira and Halstead, 2001; Wheeler *et al.*, 2009). Additionally, cycles of aggression and restrictive interventions observed by other service users can deteriorate the therapeutic environment on the ward (Luiselli *et al.*, 2009). At the institutional level, aggression reduces the overall quality of care because of higher staff turnover, which often leads to hiring less experienced staff with greater training needs (Hatton *et al.*, 2001). Financial costs also rise, driven by increased staffing needs, higher rates of absenteeism because of illness or injury and the need to address both physical and psychological trauma (Newman *et al.*, 2021). Given the importance of the problem, several countries have developed guidelines for managing challenging behavior, including aggression, intended for implementation in formal care settings (National Institute for Health and Care Excellence, 2015a, 2015b, 2019).

Clinical interventions to mitigate or reduce aggression in adults with ID/ASD have been proposed by recent guidelines. Procedures include thorough analysis of service users' preferences and needs and analysis of the individual, carer and environmental factors that may trigger aggressive behaviors. In complex or resistant cases, functional assessment by a multidisciplinary team is recommended (Community living British Columbia, 2016; National Institute for Health and Care Excellence, 2015a, 2015b, 2019; The Ontario Association for Behavioural Analysis, 2019). Based on this assessment, clinical team members develop a behavior support plan for each service user to establish intervention goals and monitor progress (Community living British Columbia, 2016; National Institute for Health and Care Excellence, 2015a). Anger management interventions based on cognitive behavioral principles and tailored sensory interventions may be included in the plan. Antipsychotics are recommended only if psychological intervention shows no effect or if the risks posed by aggressive behavior are very severe and only in combination with psychosocial intervention (National Institute for Health and Care Excellence, 2015a, 2019; The Ontario Association for Behavioral Analysis, 2019). Prescription of antipsychotics should follow strict rules, such as mandatory description of type, frequency and severity of aggressive behavior and its triggers, consent of service-user or their legal representatives, review of medication effectiveness, side-effect monitoring and discontinuing medication if

there is no response within six months of starting treatment ([National Institute for Health and Care Excellence, 2015a](#)). Rapid tranquilization is acceptable as an emergency measure only ([National Institute for Health and Care Excellence, 2015b](#)). However, aggressive behavior persists even in countries that have adopted these guidelines ([Smith *et al.*, 2022](#)), and recent reviews on the efficacy of clinical intervention may offer insight into the reasons why.

Recent reviews underscore the limited overall efficacy of clinical interventions for aggression in this population. For example, a Cochrane review on antipsychotics for aggressive behavior in individuals with ID found no positive impact on behavior but highlighted the low quality of trials and underreporting of medication side effects ([Brylewski and Duggan, 2004](#)). In individuals with ASD, another Cochrane review found that pharmacological intervention were effective for irritability but not for anger ([Iffland *et al.*, 2023](#)). Non-Cochrane reviews also stressed the small number of available controlled studies, their questionable methodological quality and the heterogeneity in outcome measures ([Dinca *et al.*, 2005](#); [Im, 2021](#); [Matson and Neal, 2009](#)). A Cochrane review of behavioral and cognitive-behavioral interventions for aggression in individuals with ID/ASD also indicated that trials are limited in number and that existing evidence primarily focuses on service users living in family settings. Dialectical behavior therapy for anger and mindfulness training for caregivers showed some efficacy, while positive behavioral support did not ([Prior *et al.*, 2023](#)). In contrast, a non-Cochrane review reported the effectiveness of non-pharmacological interventions for challenging behavior, particularly combining mindfulness with behavioral techniques ([Bruinsma *et al.*, 2020](#)).

To summarize, while numerous trials have examined the efficacy of clinical interventions for managing aggressive behavior in individuals with ID/ASD, the evidence remains limited, making clinical decision-making complex. Given these limitations, shifting focus from intervention efficacy to conducting a state-of-the-art review that examines the evolution of research perspectives on this issue could illuminate potential paths forward. This type of review can clarify unproductive approaches, identify overlooked opportunities and stimulate the development of novel solutions for complex clinical challenges. For instance, state-of-the-art reviews have contributed to advances in understanding mental health comorbidities in individuals with ID ([Dosen, 1993](#)) and service trajectories in the UK ([Russell, 1984](#)). More recently, these reviews elucidated such questions as an application of extended reality technologies for ASD ([Bennewith *et al.*, 2024](#)) and challenges associated with pain assessment in this population ([Nicolardi *et al.*, 2023](#)).

Thus, this review aims to answer critical questions: “Where are we now?”, “How did we arrive here?” and “What future directions should we take?” concerning prevention and management for aggression in individuals with ID/ASD. In addition, this review seeks to identify and synthesize evidence on interventions that directly target aggressive behavior among service users, with particular attention to approaches that show promise in terms of effectiveness.

Methods

This study is part of a larger project aimed at describing existing clinical and organizational practices for individuals with ID/ASD who exhibit aggressive behavior in formal care settings. Specifically, this component of the study focuses on the evolution of clinical practices designed to directly address or prevent aggressive behavior through targeted interventions. The analysis, synthesis and results presentation were carried out as a state-of-the-art literature review ([Barry *et al.*, 2022](#)) to provide an overview of the progression of knowledge over time and suggest directions for future research. The literature search and data extraction were carried out in accordance with recent guidelines for systematic scoping reviews ([Levac *et al.*, 2010](#); [Peters *et al.*, 2020](#)). The literature search was structured based on the Population, Concept and Context (PCC) framework by

Pollock *et al.* (2023), focusing on ID/ASD (P), aggressive behavior (C) and specialized services (C) (Supplementary Materials 1 presents the search equation). The literature search was conducted on January 24th, 2024, using the PsycINFO, EMBASE, Medline, CINAHL and EBM Reviews databases. No additional searches were performed in the reference lists of retained articles; similarly, no authors were contacted. The first 100 entries in both English and French from *Google Scholar* were also screened and included in the main results pool. A grey literature search was conducted using the same core concepts, targeting clinical guidelines and Cochrane systematic reviews. Details of repositories, search queries and results from the grey literature search are provided in Supplementary Materials 2.

Inclusion criteria were: study samples limited to adults (according to the local jurisdiction, or, if not specified, 18 years old and more); studies addressing aggression or aggressive behavior; specialized care settings; quantitative design; and research conducted in countries within the Organization for Economic Co-operation and Development (OECD) to ensure comparability of economic and legislative environments. Exclusion criteria included: studies published before 1994 (corresponding to the clarification of the ASD diagnosis in the DSM-IV); studies focused on self-harm or other forms of challenging behavior (e.g. stereotypes); research conducted in primary care settings or addressing primary care interventions; and publication types such as book chapters, conference abstracts, opinion papers and case studies with fewer than five participants, to enhance generalizability and reduce the risk of bias associated with small sample sizes. Studies with inextricable information and studies in languages other than English or French (the languages spoken and understood by the authors) were also excluded. Titles and abstracts were screened against the primary inclusion and exclusion criteria by two independent reviewers. Disagreements were resolved by a third party (YB or AL). Following this, references were pre-screened and categorized based on the intervention goal (e.g. addressing aggressive behavior in service users vs improving overall care), the primary target of the intervention (e.g. service users vs caregiving staff) and the level at which the intervention was implemented (e.g. ward, hospital or broader health-care system). The main study protocol is registered on the Open Science Network platform (<https://osf.io/4n6gm>).

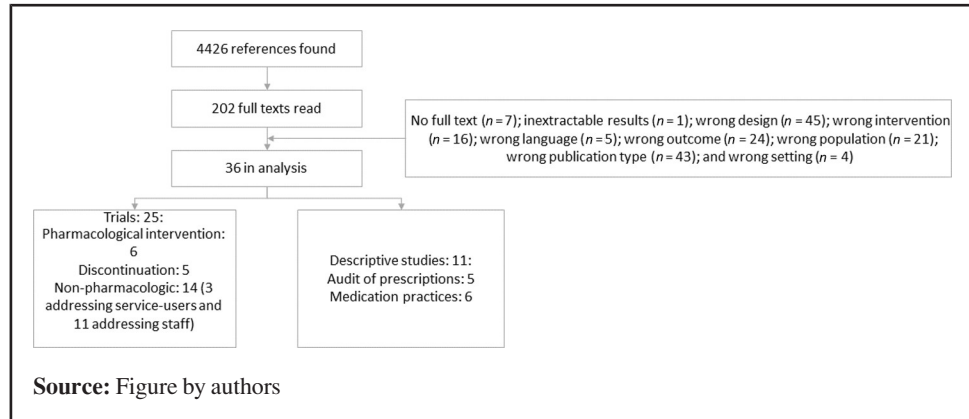
This paper presents the results of a review of interventions directly targeting aggressive behaviors among service users. Articles selected for this theme were analyzed in three steps. First, the main themes were extracted by study design, types of intervention and target of intervention. Second, data related to each theme were extracted independently by two reviewers and documented using a pre-established extraction sheet. Finally, a narrative synthesis of results was the conducted for each theme.

Results

Of 4,426 initial references, 202 were selected for full-text reading. Reasons for exclusion were as follows: full text not found ($n = 7$); inextractable results ($n = 1$); wrong design ($n = 45$); wrong intervention ($n = 16$); wrong language ($n = 5$); wrong outcome ($n = 24$); wrong population ($n = 21$); wrong publication type ($n = 43$); and wrong setting ($n = 4$), as per the previously mentioned inclusion and exclusion criteria (Figure 1).

Studies reporting “irritability” or “externalized challenging behaviour” instead of “aggression” or “violence” were included. Notably, a substantial number of potentially relevant studies were excluded for assessing challenging behavior overall rather than aggressive behavior specifically (“wrong outcome,” $n = 9$). Case studies with fewer than five participants (“wrong design,” $n = 5$) and studies with mixed samples (adults and children/adolescents, “wrong population,” $n = 6$) were excluded for the sake of generalizability of results. One potentially relevant study was excluded for presenting preliminary results from an ongoing trial (“wrong design.”) Two of the selected articles on non-pharmacological interventions reported results from the same trial; therefore, their

Figure 1 A flow chart of study selection



findings were merged. A description of included studies by intervention group is provided in Supplementary Tables 1–5. Study data are available from the corresponding author upon request. A total of 36 full texts were retained.

Two main topics were covered in the selected studies: pharmacologic trials ($n = 25$; non-pharmacologic interventions, $n = 13$; pharmacologic interventions, $n = 6$; discontinuation trials, $n = 5$) and descriptive studies ($n = 11$; audit reports, $n = 5$; descriptions of prescription practices for aggressive behavior, $n = 6$).

Several temporal trends were observed in both the number of published trial results and descriptive studies [Figures 2(a) and 2(b)]. First, there has been a declining trend in the number of published papers on interventions for ID/ASD targeting aggressive behavior over the years [Figure 2(a)]. Second, studies on non-pharmacologic interventions and antipsychotic discontinuation trials have gradually replaced clinical trials of pharmacologic treatments. Finally, the overall number of descriptive studies gradually declined after peaking in 2000–2004.

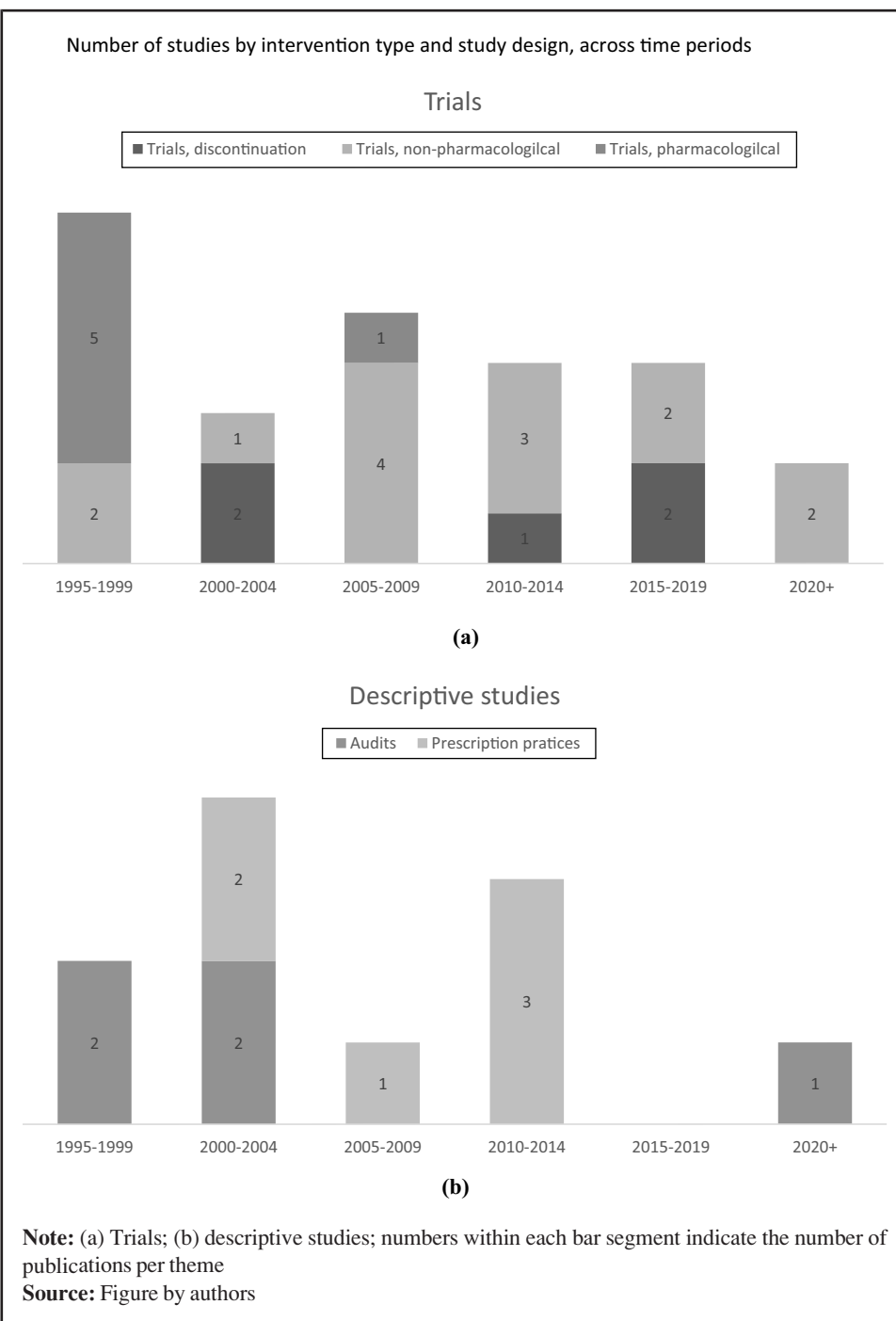
This sequence of topics in academic publications may not necessarily reflect the evolution of therapeutic practices. However, it may indicate the establishment of a consensus and the consolidation of clinical practices in the field.

An overview of studies is presented below for each theme study populations, measures of aggressive behavior and intervention effects are presented in Supplementary Tables 1–5.

Trials: Pharmacological interventions

Clinical trials of pharmacological interventions (1995–2008): We found six clinical trials of pharmacological interventions. Three trials assessed the effects of antidepressants (Davanzo *et al.*, 1998; King and Davanzo, 1996; Verhoeven and Tuinier, 1996), and three assessed the effects of antipsychotics (Boachie and McGinnity, 1997; Cohen *et al.*, 1998; Tyrer *et al.*, 2008). With the exception of Tyrer *et al.* (2008), all included studies are non-controlled trials conducted in the late 1990s (1995–1999). These trials share the same methodological limits: non-controlled design, lack of description of participant selection, no reported retention rate, no description of inclusion and exclusion criteria, no description of environments and psychosocial co-interventions and no use of validated tools to assess outcomes. Nevertheless, the studies report positive effects on one or more indicators of aggressive behavior, including its frequency (Cohen *et al.*, 1998; Davanzo *et al.*, 1998; King and Davanzo, 1996), severity (Davanzo *et al.*, 1998; King and Davanzo, 1996) or the number of participants exhibiting such behavior (Boachie and McGinnity, 1997; Verhoeven and Tuinier, 1996).

Figure 2 Number of selected publications by theme and time period



The study by [Tyrer et al. \(2008\)](#), published in The Lancet, holds a distinctive place in the literature because of its high methodological quality. This randomized, multicenter, controlled trial compared the efficacy of a typical antipsychotic (haloperidol) and an atypical antipsychotic (risperidone) to that of a placebo, using validated outcome measures. A reduction of aggression was observed across all groups. However, the most substantial decrease was noted in the placebo group. In the absence of a significant

difference between treatment and placebo conditions, the authors advise against the use of antipsychotics for the management of aggression in patients with ID/ASD.

Discontinuation of antipsychotics (1995–2019): Given the growing body of evidence pointing to the limited efficacy of pharmacological treatments, it is reasonable to expect a corresponding increase in clinical trials focused on antipsychotic discontinuation. As such, we identified one descriptive study (Bisconer *et al.*, 1995) and five clinical trials (de Kuijper *et al.*, 2014; de Kuijper and Hoekstra, 2018; Gerrard *et al.*, 2019; Hanzel *et al.*, 2000; Stevenson *et al.*, 2004) addressing this theme. Three of these studies focused on the discontinuation of antipsychotics overall (de Kuijper *et al.*, 2014; de Kuijper and Hoekstra, 2018; Gerrard *et al.*, 2019), one on the effect of barbiturate discontinuation on antipsychotic doses (Hanzel *et al.*, 2000) and one on the discontinuation of thioridazine specifically, a first-generation anti-psychotic (Stevenson *et al.*, 2004).

Only one study reported a weak rate of discontinuation: those on thioridazine (Stevenson *et al.*, 2004), where only 7.5% of participants were completely discontinued. Others stated a relatively high rate of discontinuation: around 35% (Bisconer *et al.*, 1995; de Kuijper *et al.*, 2014; de Kuijper and Hoekstra, 2018). Meanwhile, discontinuation was not a linear process: many patients changed their status back and forth between “discontinued” and “non-discontinued” during the trials (de Kuijper *et al.*, 2014; de Kuijper and Hoekstra, 2018; Stevenson *et al.*, 2004). Aggressive behavior decreased (de Kuijper *et al.*, 2014; de Kuijper and Hoekstra, 2018; Hanzel *et al.*, 2000; Stevenson *et al.*, 2004) or showed no changes (Bisconer *et al.*, 1995) following successful complete discontinuation. Incomplete discontinuation was accompanied by stabilization (de Kuijper and Hoekstra, 2018) or increase (de Kuijper *et al.*, 2014) in aggressive behavior. Aggressive behavior was reduced to a lesser extent in participants with stronger antipsychotic side effects (Stevenson *et al.*, 2004). An increase in aggressive behavior often followed an unsuccessful discontinuation attempt (Stevenson *et al.*, 2004).

The non-intended value of this research is the thorough documentation of antipsychotic side effects (de Kuijper and Hoekstra, 2018), which include urinary problems in 80% of participants, dyskinesia in 45%, temperature dysregulation in 38%, dysphagia in 36%, defecation disorders in 33%, akathisia in 30% and parkinsonism in 24%. Muscle spasms, abdominal pain, heartburn and anxiety were also reported (de Kuijper *et al.*, 2014; de Kuijper and Hoekstra, 2018). Being a woman, having a lower level of intellectual disability, not having a co-occurring autism diagnosis, not having been recently hospitalized and taking only one antipsychotic were all associated with higher odds of successful discontinuation (de Kuijper and Hoekstra, 2018; Stevenson *et al.*, 2004).

Trials: non-pharmacological interventions

Intervention for service users aimed at preventing aggressive behavior (2005–2017): We found three studies reporting the effect of non-pharmacological interventions: one on dialectical behavioral therapy (Brown *et al.*, 2013), one on extracranial stimulation (Childs, 2005) and one trial on the use of massages, multisensory environments and their combination, against a control group (Chan and Chien, 2017). Uncontrolled trials showed positive results for interventions: in the nine-participant trial of extracranial stimulation, the frequency of crisis intervention was reduced by more than twice (Childs, 2005). Similar results were obtained in a four-year open trial of adapted dialectical behavior therapy delivered to 40 participants (Brown *et al.*, 2013). A controlled trial showed no effect of massages, multisensory environments and their combination on aggression in individuals with ID (Chan and Chien, 2017).

Trials: interventions for staff aimed at preventing aggression in service users

Individualized management plan (1995–1999): The first report on the efficacy of individualized management plans dates to 1995. In that study, a committee was created to

review medication use and restraint practices (Bisconer *et al.*, 1995). The review committee was composed of clinicians, administrators and community representatives (e.g. parents or service user advocates). Its goal was to assess each individual plan for managing challenging behavior and to adapt it as needed to better align with service users' needs. Over a six-year period, the intervention led to a reduction in antipsychotic use and associated side effect burden. A quarter of service users discontinued the medication completely. While there was no decrease in the proportion of service users subjected to physical restraint (around 20%), its frequency of use diminished from 8.5 to 1.3 incidents per month, and its duration reduced from 1.8 h to 1 h. There was a non-significant decrease in incidents of physical (–3%) and an important decrease in incidents of verbal (–33%) aggression (Bisconer *et al.*, 1995). However, the efficacy of individual plans was not consistently replicated in subsequent studies. A 1999 publication reports no changes in the proportion of service users with a goal related to problem behavior in individual management plans; however, the content of individual plans was not revealed (Stancliffe *et al.*, 1999). A 2005 study (Thomas *et al.*, 2005) reports an almost twofold reduction in cases of physical aggression overall and in aggression causing injuries. In this study, individual care plans were a part of a larger intervention, including staff training to recognize, prevent and de-escalate incidents of aggression; organizational, environmental and clinical risk assessments; risk management, care program approach and care coordination; as well as use of advance directives.

Active support training (2008–2010): The “Active Support” intervention consists of two parts: active listening to a person's preferences regarding daily activities (the type of activities preferred, ways of proceeding) and active assistance from staff so that the person can undertake the preferred activities in their own way. It is assumed that the intervention indirectly reduces problem behaviors, including aggression, by structuring the routines of people with ID/ASD and by allowing them to occupy their time with meaningful activities. Two studies have tested the effect of the training (Koritsas *et al.*, 2008; Stancliffe *et al.*, 2010). The intervention was administered to staff as a three-day classroom training with the distribution of training materials (Koritsas *et al.*, 2008; Stancliffe *et al.*, 2010) along with either two hours (Stancliffe *et al.*, 2010) or two days (Koritsas *et al.*, 2008) of observation and coaching in the workplace. No difference in the score on the Inventory for Client and Agency Planning (Bruininks *et al.*, 1986) at post-training was observed in the study with the shorter coaching period (Stancliffe *et al.*, 2010). In the study with the longer coaching period, an increase in score on the Disruptive behavior subscale of the Developmental Behavior Checklist for Adults (Mohr *et al.*, 2011) at post-training but a decrease at the six-month follow-up (Koritsas *et al.*, 2008) were reported.

Positive behavior support (2024): A controlled non-randomized study showed no overall efficacy of positive behavior support training provided to direct care staff (Bruinsma *et al.*, 2024). The training consisted of eight bi-weekly sessions of 3 h each, supplemented by homework and five supervision sessions. A post-hoc analysis showed better outcomes in individuals with more advanced ID (severe or profound) and higher baseline score on the irritability scale of the Aberrant Behavior Checklist [ABC, (Aman and Singh, 1986)]. These findings suggest that the intervention may be particularly effective, or successfully adapted, for specific subgroups of individuals with ID/ASD who display aggressive behavior.

Physical intervention training (2000–2022): Two articles published 20 years apart report on the outcomes of staff training in physical intervention during crisis situations (Baker and Bissmire, 2000; Haines-Delmont *et al.*, 2022). Both interventions viewed physical intervention during a crisis as a last resort measure. However, the primary objective of the training in the first study was to improve staff readiness for responding to incidents of aggression, whereas the more recent study focused on preparing staff for the prevention and positive management of possible outburst (Baker and Bissmire, 2000). The earlier study found that the intervention resulted in an increase in reported physical interventions

and a decrease in crisis interventions where the specific type of intervention (e.g. physical restraint) was not documented. The average number of incidents remained unchanged. The more recent study reported on the “No Force First” program ([Haines-Delmont et al., 2022](#)), which showed a reduction in episodes of aggression toward staff (from 1,300 to 1,000) and toward other patients (from 404 to 283) at post-intervention.

Other psychosocial interventions (2009–2017): This group of studies includes interventions not previously described. The outcomes of a trial evaluating the specialized behavioral team model (2009–2011) were reported in two publications ([Hassiotis et al., 2011](#); [Hassiotis et al., 2009](#)). The team consisted of behavior specialists trained in behavior analysis and intervention in the field of intellectual disability. The specialists coordinated intervention plans for each individual and their support staff. The intervention led to a reduction in irritability scores of the ABC at both the six-month ([Hassiotis et al., 2009](#)) and two-year ([Hassiotis et al., 2011](#)) follow-ups, compared to usual care. Another intervention, nidotherapy ([Tyrrer et al., 2017](#)), aims to decrease aggression in patients with ID by modifying their environment. The four components of nidotherapy are: understanding the person and their environment, analyzing the environment, creating a new environmental pathway and monitoring the pathway. These components were presented to staff over a six-month period. Nidotherapy was shown to be effective to control clients’ aggressive behavior. However, its positive effect started to manifest seven months after the implementation of the intervention.

Descriptive studies

Prescribing practices for aggressive behavior (2001–2013): Despite the methodological limitations of clinical trials, pharmacological treatments remain a common practice. Five studies describing these practices were found. They addressed continuous ([Kwok et al., 2010](#); [Okorie and Connaughton, 2011](#); [Stolker et al., 2002](#)), “pro re nata” (PRN) or “as needed” ([Delafor et al., 2013](#)) prescriptions; and determinants of antipsychotic prescription ([Tsakanikos et al., 2007](#)) or polypharmacy ([Okorie and Connaughton, 2011](#); [Stolker et al., 2001](#)). These studies collectively report a high rate of neuroleptics prescription in general and of antipsychotics in particular, as well as frequent instances of polypharmacy and high-dose antipsychotic prescription (more than 100% of daily recommended doses) ([Delafor et al., 2013](#); [Kwok et al., 2010](#); [Stolker et al., 2001, 2002](#); [Tsakanikos et al., 2007](#)). Determinants of prescription were aggressive/bizarre behavior and comorbid ASD or mental health issues ([Kwok et al., 2010](#); [Stolker et al., 2001, 2002](#); [Tsakanikos et al., 2007](#)). Disruptive behaviors were more likely to be associated with the prescription of antipsychotics than psychotic symptoms *per se* ([Delafor et al., 2013](#); [Okorie and Connaughton, 2011](#); [Stolker et al., 2002](#)). PRN medication was more frequently prescribed than administrated ([Delafor et al., 2013](#)). Despite the medication, a substantial proportion of patients, between 23% ([Delafor et al., 2013](#)) and 60% ([Tsakanikos et al., 2007](#)), remained physically aggressive. Side effects of medication were not systematically reported.

Audits of prescribing practices (1996–2021): Despite evidence showing that antipsychotics are not effective in preventing or managing aggressive behavior – and despite recommendation from a randomized clinical trial against their use – these medications continue to be widely prescribed in formal care settings. In response, results of several audits of prescribing practices have been published. The studies retained for this review ([Bisconer et al., 1996](#); [Dalvi et al., 2003](#); [Elhusein et al., 2021](#); [Marshall, 2004](#)) applied different quality criteria to evaluate prescribing patterns. These included locally developed guidelines ([Kalachnik et al., 1995](#); [Marshall, 2004](#)), the Royal College of Psychiatrists Consensus Statement ([Royal College of Psychiatrists, 1993](#)) and the NICE quality standards ([National Institute for Health and Care Excellence, 2019](#)). These guidelines shared a common emphasis on the need for transparency in prescribing practices. This included thorough description of the index behavior, obtaining informed consent from service users, monitoring of side effects and conducting regular medication reviews. These guidelines

also underscore that polypharmacy and prescribing doses above recommended levels should be avoided and that medication should only be administered in addition to psychosocial interventions (Kalachnik *et al.*, 1995; National Institute for Health and Care Excellence, 2019; Royal College of Psychiatrists, 1993).

Results of the audits showed an insufficient description of the target behavior in service-users' documentation (Bisconer *et al.*, 1996; Marshall, 2004). Medication was rarely part of an integrated management plan (Bisconer *et al.*, 1996; Elhusein *et al.*, 2021). Evidence of the evaluation of service users' capacity to provide informed consent to medication was scarce (Elhusein *et al.*, 2021). Prescriptions often lacked a documented rationale for medication use or polypharmacy (Dalvi *et al.*, 2003; Elhusein *et al.*, 2021). Objective evaluation of treatment response (Elhusein *et al.*, 2021; Marshall, 2004), including side-effect monitoring (Dalvi *et al.*, 2003; Marshall, 2004), were also infrequently recorded. Second opinions, particularly for high-dose antipsychotic prescriptions (Dalvi *et al.*, 2003), or participation in medication reduction programs were rarely sought (Bisconer *et al.*, 1996). Multidisciplinary reviews (Bisconer *et al.*, 1996) and the provision of written information on possible side effects were uncommon (Bisconer *et al.*, 1996).

Despite being prescribed antipsychotics, an important part of service users continued to manifest aggressive behaviors (Bisconer *et al.*, 1996; Dalvi *et al.*, 2003; Marshall, 2004). Post-audit recommendations included conducting regular audits and implementing new reports to make reporting less time- and effort-consuming (Marshall, 2004). In addition, it was recommended to mark the files of service users with high doses of antipsychotics with red indicators to ensure vital signs were monitored weekly. Monitoring checklists may also be helpful (Dalvi *et al.*, 2003). Additionally, strengthening the regulation of neuroleptic prescribing and investing in the recruitment of case managers to monitor the quality of care and advocate for service users' rights within health care and social services were recommended (Bisconer *et al.*, 1996).

Discussion

This review aimed to examine approaches to preventing and managing aggression in individuals with ID/ASD. Its goal was to answer three key questions: "Where are we now?", "How did we get there?" and "What are the next steps?"

Where are we now?

We found that medication and restraint use in formal care settings can be significantly reduced without a corresponding increase in the frequency or severity of aggressive behavior. While reduction is feasible, complete discontinuation may present challenges. First, it may provoke increased aggressive behavior and the re-emergence of side effects. Second, service users and providers may not be fully prepared for complete antipsychotic discontinuation (de Kuijper *et al.*, 2022; de Kuijper and Hoekstra, 2017; Kleijwegt *et al.*, 2019). Qualitative studies reveal fear of losing control among both groups, and a discontinuation trial showed limited willingness to stop antipsychotic medication without strong support. The statistically significant placebo effect observed in a controlled trial of antipsychotics (Tyrer *et al.*, 2008) corroborates the hypothesis that service users place strong belief in the efficacy of medication. As such, "top-down" forced discontinuation would likely face resistance. Thus, successful discontinuation initiatives may require changes in overall attitudes surrounding medication, such as the training of dedicated staff and informal carers along with supporting the active involvement of service users to ensure commitment in discontinuation of medication.

At the same time, some literature classifies unnecessary sedation as abuse (Codina *et al.*, 2024) and acknowledge that aggression often arises in routine care situations involving service users and staff (Embregts *et al.*, 2009). Marshall (2004) stress that the continued use of antipsychotics in formal care settings is driven by the need for rapid control of

aggressive behavior, limited institutional resources, a shortage of family placement options and a lack of suitably trained managers to implement targeted organizational and environmental changes (Marshall, 2004). Thus, organizational issues – such as underqualification, dissatisfaction and understaffing (Felce *et al.*, 1993; Hatton *et al.*, 2001) – appear to play a significant role in the ubiquitous use of antipsychotics (Codina *et al.*, 2024; de Kuijper and Hoekstra, 2017; Embregts *et al.*, 2009). Thus, antipsychotic use may be partially improved with the resolution of organizational challenges.

Similarly, use of physical restraints and proper delivery of psychosocial interventions refer to organizational limits, practices and culture (de Kuijper and Hoekstra, 2017). For example, efforts implement policies to reduce the use of restraint may face obstacles because of varying interpretations by staff and service users. Older publications report that staff often viewed restraints as a routine practice (Saloviita, 2002), while some service-users perceived being restrained as a successful act of defiance against hospital authority, recognized by their peers (Luiselli *et al.*, 2009). However, more recent publications describe restraint as a “despair measure” from the staff’s perspective (Williams, 2010) and a traumatizing experience for service users (Haines-Delmont *et al.*, 2022). Thus, the efficacy of such interventions may depend on the alignment between the institution’s underlying values and attitudes and the intended goals of the intervention.

“How did we get there?”

First, the number of studies on aggressive behaviors is surprisingly small, even when “irritability” and “externalized challenging behaviour” are included. Given the extensive literature on behavioral interventions aimed at reducing challenging behaviors *overall*, this finding may suggest that this type of challenging behaviors is most difficult to correct. Second, small, uncontrolled trials reported some success in the effectiveness of interventions; however, rigorously controlled, randomized trials with blinded outcome assessments yielded negative results. Additionally, we found that pre-post studies using historical data for the pre-intervention assessment often reported positive effects. It is possible that the mere presence of researchers in facilities may alter staff behavior, leading to a reduction in aggressive behaviors in service users, a phenomenon known as “The Hawthorne Effect” (McCarney *et al.*, 2007). Therefore, the apparent intervention effect might stem from external oversight, not the intervention itself. Finally, we found that psychosocial interventions, especially those that do not target aggressive behavior directly, present a more promising avenue.

“What are the next steps?”

In general, we found that organizational practices consistently emerge in discussion of the effectiveness of individual interventions, whether in relation to preparedness for antipsychotic discontinuation, fidelity in implementing psychosocial interventions, attitudes toward restraint or formal care routines. Therefore, an ecological approach seems to be the future direction for preventing and managing incidents of aggressive behavior (Lemieux *et al.*, 2025; Olivier-Pijpers *et al.*, 2019). In brief, this approach involves engaging broader environments in the rehabilitation process. Ideally, staff is well trained and satisfied with working conditions; direct management is supportive; decision-making is transparent and involves staff, informal carers and service-users; upper management implements adequate procedures; facilities are sufficiently funded; and the community cares about adults with ID/ASD and providing safe, ethical and dignified care. Several initiatives of this type were described. For example, the “Stopping over-medication of people with a learning disability [intellectual disability], autism or both,” known as the STOMP project, of England’s National Health Service, unites researchers and clinicians to respond to the unnecessary antipsychotic medication of adults with ID/ASD (Biswas *et al.*, 2021; Deb *et al.*, 2023). In addition, an institution-wide intervention for improving the fidelity of behavioral interventions significantly reduced the frequency and severity of aggressive behaviors in service users (Brady, 2022); a realistic review of complex interventions shows the effectiveness of a

humanistic, individualized and tailored approach (Royston *et al.*, 2023); and recovery-promoting physical environments may also be a factor to consider (Bodryzlova *et al.*, 2024).

Implications for research and practice. Research might contribute to the creation of a robust evidence base on the influence of managerial, organizational and systemic factors in the management and prevention of incidents of aggressive behavior in adults with ID/ASD. This evidence should inform practice and guide action across all levels that impact behavior in this complex population, including frontline staff, direct and upper management, health-care systems and the broader community.

Limitations. The main limitation of this review is the selection of literature in a unique pool without creating a separate search equation for each subsection of the study. It may cause the omission of important publications in the field. It does not allow for a complete picture of evaluated interventions for the prevention and management of aggressive behaviors in individuals with ID/ASD. However, it allows us to trace the evolution of discussions on the theme. In addition, a formal evaluation of the methodological quality of the included studies was not conducted. However, most common methodological limits are discussed throughout the text.

Conclusion

This review analyzes the effectiveness of measures aimed at preventing and managing aggressive behavior in formal care settings. It has found a transition in research interests from pharmacological to psychosocial interventions for people with ID/ASD who display aggressive behavior and from interventions directly addressed to service users to environmental interventions, including those relating to staff training. Further research would be relevant to clarify the effect of environmental changes on aggression in individuals with ID/ASD in formal care settings.

References

- Alexander, R., Devapriam, J., Michael, D., McCarthy, J., Chester, V., Rai, R., Naseem, A. and Roy, A. (2015), "Why can't they be in the community? A policy and practice analysis of transforming care for offenders with intellectual disability", *Advances in Mental Health and Intellectual Disabilities*, Vol. 9 No. 3, pp. 139-148.
- Aman, M.G. and Singh, N.N. (1986), *Aberrant Behavior Checklist Manual*, Slosson Publications, New York, NY.
- Baker, P.A. and Bissmire, D. (2000), "A pilot study of the use of physical intervention in crisis management of people with intellectual disabilities who present challenging behaviour", *Journal of Applied Research in Intellectual Disabilities*, Vol. 13 No. 1, pp. 38-45.
- Barry, E.S., Merkebu, J. and Varpio, L. (2022), "Understanding state-of-the-art literature reviews", *Journal of Graduate Medical Education*, Vol. 14 No. 6, pp. 659-662, doi: [10.4300/jgme-d-22-00705.1](https://doi.org/10.4300/jgme-d-22-00705.1).
- Bennewith, C., Bellali, J., Watkins, L., Tromans, S., Bhui, K. and Shankar, R. (2024), "Sublime and extended reality experiences to enhance emotional wellbeing for autistic people: a state of the art review and narrative synthesis", *International Journal of Social Psychiatry*, Vol. 70 No. 7, pp. 1202-1210, doi: [10.1177/00207640241261172](https://doi.org/10.1177/00207640241261172).
- Bisconer, S.W., Zhang, X. and Sine, L.F. (1995), "Impact of a psychotropic medication and physical restraint review process on adults with mental retardation, psychiatric diagnoses, and challenging behaviors", *Journal of Developmental and Physical Disabilities*, Vol. 7 No. 2, pp. 123-135.
- Bisconer, S.W., Sine, L.F. and Zhang, X. (1996), "Prevalence and patterns of psychotropic medication use by adults with mental retardation living in community settings", *Journal of Developmental and Physical Disabilities*, Vol. 8 No. 4, pp. 291-311.
- Biswas, A., Baldwin, D., Courtenay, K., Hiremath, A., Jaydeokar, S., Lovell, M., McAlister, H. and Shankar, R. (2021), *Stopping the overmedication of people with intellectual disability, autism or both (STOMP) and supporting treatment and appropriate medication in paediatrics (STAMP): Report number: PS05/21*. Royal College of Psychiatrists.

- Boachie, A. and McGinnity, M.G.A. (1997), "Use of clozapine in a mental handicap hospital: report of the first 17 patients", *Irish Journal of Psychological Medicine*, Vol. 14 No. 1, pp. 16-19.
- Bodryzlova, Y., Lemieux, A.J., Dufour, M., Côté, A., Lalancette, S. and Crocker, A.G. (2024), "Hospital design for inpatient psychiatry: a realistic umbrella review", *Journal of Psychiatric Research*, Vol. 178, pp. 94-106, doi: [10.1016/j.jpsychires.2024.07.045](https://doi.org/10.1016/j.jpsychires.2024.07.045).
- Brady, L.M. (2022), "Improving procedural fidelity of behaviour interventions in residential services: an organisational approach", *Dissertation Abstracts International: Section B: The Sciences and Engineering*, No. 83.
- Brown, J.F., Brown, M.Z. and Dibiasio, P. (2013), "Treating individuals with intellectual disabilities and challenging behaviors with adapted dialectical behavior therapy", *Journal of Mental Health Research in Intellectual Disabilities*, Vol. 6 No. 4, pp. 280-303, doi: [10.1080/19315864.2012.700684](https://doi.org/10.1080/19315864.2012.700684).
- Bruininks, R.H., Weatherman, R.F. and Woodcock, R.W. (1986), *Inventory for Client and Agency Planning (ICAP)*, Riverside Publishing, Chicago.
- Bruinsma, E., van den Hoofdakker, B.J., Hoekstra, P.J., de Kuijper, G. and de Bildt, A.A. (2024), "Effects of positive behaviour support delivered by direct staff on challenging behaviours and quality of life of adults with intellectual disabilities: a multicentre cluster-controlled trial", *Journal of Applied Research in Intellectual Disabilities*, Vol. 37 No. 1, p. e13164, doi: [10.1111/jar.13164](https://doi.org/10.1111/jar.13164).
- Bruinsma, E., van den Hoofdakker, B.J., Groenman, A.P., Hoekstra, P.J., de Kuijper, G., Klaver, M. and de Bildt, A.A. (2020), "Non-pharmacological interventions for challenging behaviours of adults with intellectual disabilities: a meta-analysis", *Journal of Intellectual Disability Research*, Vol. 64 No. 8, pp. 561-578, doi: [10.1111/jir.12736](https://doi.org/10.1111/jir.12736).
- Brylewski, J. and Duggan, L. (2004), "Antipsychotic medication for challenging behaviour in people with learning disability", *Cochrane Database of Systematic Reviews*, No. 3, doi: [10.1002/14651858.CD000377.pub2](https://doi.org/10.1002/14651858.CD000377.pub2).
- Chan, J.S.L. and Chien, W.T. (2017), "A randomised controlled trial on evaluation of the clinical efficacy of massage therapy in a multisensory environment for residents with severe and profound intellectual disabilities: a pilot study", *Journal of Intellectual Disability Research*, Vol. 61 No. 6, pp. 532-548, doi: [10.1111/jir.12377](https://doi.org/10.1111/jir.12377).
- Childs, A. (2005), "Cranial electrotherapy stimulation reduces aggression in a violent retarded population: a preliminary report", *The Journal of Neuropsychiatry and Clinical Neurosciences*, Vol. 17 No. 4, pp. 548-551, doi: [10.1176/jnp.17.4.548](https://doi.org/10.1176/jnp.17.4.548).
- Codina, M., Díaz-Faes, D.A. and Pereda, N. (2024), "Better at home or in residential care? Victimization of people with intellectual disabilities at the hands of caregivers", *Research in Developmental Disabilities*, Vol. 146, p. 104689, doi: [10.1016/j.ridd.2024.104689](https://doi.org/10.1016/j.ridd.2024.104689).
- Cohen, S.A., Ihrig, K., Lott, R.S. and Kerrick, J.M. (1998), "Risperidone for aggression and self-injurious behavior in adults with mental retardation", *Journal of Autism and Developmental Disorders*, Vol. 28 No. 3, pp. 229-233, doi: [10.1023/a:1026069421988](https://doi.org/10.1023/a:1026069421988).
- Community living British Columbia (2016), "Behaviour support & safety planning", A Guide for Service Providers.
- Crocker, A.G., Mercier, C., Lachapelle, Y., Brunet, A., Morin, D. and Roy, M.E. (2006), "Prevalence and types of aggressive behaviour among adults with intellectual disabilities", *Journal of Intellectual Disability Research*, Vol. 50 No. 9, pp. 652-661, doi: [10.1111/j.1365-2788.2006.00815.x](https://doi.org/10.1111/j.1365-2788.2006.00815.x).
- Dalvi, M., Thalayasingam, S.P. and George, G.R. (2003), "Audit on high dose antipsychotic medication in three tertiary services for people with learning disability", *The British Journal of Developmental Disabilities*, Vol. 49 No. 97, pp. 117-124.
- Davanzo, P.A., Belin, T.R., Widawski, M.H. and King, B.H. (1998), "Paroxetine treatment of aggression and self-injury in persons with mental retardation", *American Journal on Mental Retardation*, Vol. 102 No. 5, pp. 427-437, doi: [10.1352/0895-8017\(1998\)102<0427:ptoas>2.0.co;2](https://doi.org/10.1352/0895-8017(1998)102<0427:ptoas>2.0.co;2).
- de Kuijper, G. and Hoekstra, P.J. (2017), "Physicians' reasons not to discontinue long-term used off-label antipsychotic drugs in people with intellectual disability", *Journal of Intellectual Disability Research*, Vol. 61 No. 10, pp. 899-908, doi: [10.1111/jir.12385](https://doi.org/10.1111/jir.12385).
- de Kuijper, G. and Hoekstra, P.J. (2018), "An Open-Label discontinuation trial of Long-Term, off-label antipsychotic medication in people with intellectual disability: determinants of success and failure", *The Journal of Clinical Pharmacology*, Vol. 58 No. 11, pp. 1418-1426, doi: [10.1002/jcph.1271](https://doi.org/10.1002/jcph.1271).

de Kuijper, G., Evenhuis, H., Minderaa, R.B. and Hoekstra, P.J. (2014), "Effects of controlled discontinuation of long-term used antipsychotics for behavioural symptoms in individuals with intellectual disability", *Journal of Intellectual Disability Research*, Vol. 58 No. 1, pp. 71-83, doi: [10.1111/j.1365-2788.2012.01631.x](https://doi.org/10.1111/j.1365-2788.2012.01631.x).

de Kuijper, G., de Haan, J., Deb, S. and Shankar, R. (2022), "Withdrawing antipsychotics for challenging behaviours in adults with intellectual disabilities: experiences and views of experts by experience", *Int J Environ Res Public Health*, Vol. 19 No. 23, doi: [10.3390/ijerph192315637](https://doi.org/10.3390/ijerph192315637).

Deb, S., Limbu, B., Nancarrow, T., Gerrard, D. and Shankar, R. (2023), "The UK psychiatrists' experience of rationalising antipsychotics in adults with intellectual disabilities: a qualitative data analysis of free-text questionnaire responses", *Journal of Applied Research in Intellectual Disabilities*, Vol. 36 No. 3, pp. 594-603, doi: [10.1111/jar.13083](https://doi.org/10.1111/jar.13083).

Delafox, V., Kiani, R., Barrett, M., Vahabzadeh, A., Vaidya, H., Walker, G. and Bhaumik, S. (2013), "Use of PRN medication in people with intellectual disabilities", *Advances in Mental Health and Intellectual Disabilities*, Vol. 7 No. 6, pp. 346-355.

Dinca, O., Paul, M. and Spencer, N.J. (2005), "Systematic review of randomized controlled trials of atypical antipsychotics and selective serotonin reuptake inhibitors for behavioural problems associated with pervasive developmental disorders", *Journal of Psychopharmacology*, Vol. 19 No. 5, pp. 521-532, doi: [10.1177/0269881105056541](https://doi.org/10.1177/0269881105056541).

Dosen, A. (1993), "Diagnosis and treatment of psychiatric and behavioural disorders in mentally retarded individuals: the state of the art", *Journal of Intellectual Disability Research*, Vol. 37 No. s1, pp. 1-7.

Dubé, P. (2016), "Nowhere to turn. Investigation into the ministry of community and social services' response to situations of crisis involving adults with developmental disabilities", Ontario, available at: www.ombudsman.on.ca/Media/ombudsman/ombudsman/resources/Reports-on-Investigations/NTT-Fin al-EN-w-cover.pdf

Elhusein, B., Eltorki, Y., Abdallah, O. and Tahir, M.E. (2021), "Antipsychotic prescribing for patients with intellectual disabilities and challenging behaviours", *Advances in Mental Health and Intellectual Disabilities*, Vol. 15 Nos 2/3, pp. 79-88.

Embregts, P.J., Didden, R., Huitink, C. and Schreuder, N. (2009), "Contextual variables affecting aggressive behaviour in individuals with mild to borderline intellectual disabilities who live in a residential facility", *Journal of Intellectual Disability Research*, Vol. 53 No. 3, pp. 255-264, doi: [10.1111/j.1365-2788.2008.01132.x](https://doi.org/10.1111/j.1365-2788.2008.01132.x).

Felce, D., Lowe, K. and Beswick, J. (1993), "Staff turnover in ordinary housing services for people with severe or profound mental handicaps", *Journal of Intellectual Disability Research*, Vol. 37 No. 2, pp. 143-152, doi: [10.1111/j.1365-2788.1993.tb00581.x](https://doi.org/10.1111/j.1365-2788.1993.tb00581.x).

Gerrard, D., Rhodes, J., Lee, R. and Ling, J. (2019), "Using positive behavioural support (PBS) for STOMP medication challenge", *Advances in Mental Health and Intellectual Disabilities*, Vol. 13 Nos 3/4, pp. 102-112.

Haines-Delmont, A., Goodall, K., Duxbury, J. and Tsang, A. (2022), "An evaluation of the implementation of a 'No force first' informed organisational guide to reduce physical restraint in mental health and learning disability inpatient settings in the UK", *Frontiers in Psychiatry*, Vol. 13 No. 13, p. 749615, doi: [10.3389/fpsy.2022.749615](https://doi.org/10.3389/fpsy.2022.749615).

Hanzel, T.E., Bauernfeind, J.D., Kalachnik, J.E. and Harder, S.R. (2000), "Results of barbiturate antiepileptic drug discontinuation on antipsychotic medication dose in individuals with intellectual disability", *Journal of Intellectual Disability Research*, Vol. 44 No. 2, pp. 155-163, doi: [10.1046/j.1365-2788.2000.00273.x](https://doi.org/10.1046/j.1365-2788.2000.00273.x).

Hassiotis, A., Canagasabay, A., Robotham, D., Marston, L., Romeo, R. and King, M. (2011), "Applied behaviour analysis and standard treatment in intellectual disability: 2-year outcomes", *British Journal of Psychiatry*, Vol. 198 No. 6, pp. 490-491, doi: [10.1192/bjp.bp.109.076646](https://doi.org/10.1192/bjp.bp.109.076646).

Hassiotis, A., Robotham, D., Canagasabay, A., Romeo, R., Langridge, D., Blizard, R., Murad, S. and King, M. (2009), "Randomized, single-blind, controlled trial of a specialist behavior therapy team for challenging behavior in adults with intellectual disabilities", *American Journal of Psychiatry*, Vol. 166 No. 11, pp. 1278-1285, doi: [10.1176/appi.ajp.2009.08111747](https://doi.org/10.1176/appi.ajp.2009.08111747).

Hatton, C., Emerson, E., Rivers, M., Mason, H., Swarbrick, R., Mason, L., Kiernan, C., Reeves, D. and Alborz, A. (2001), "Factors associated with intended staff turnover and job search behaviour in services

- for people with intellectual disability", *Journal of Intellectual Disability Research*, Vol. 45 No. 3, pp. 258-270, doi: [10.1046/j.1365-2788.2001.00321.x](https://doi.org/10.1046/j.1365-2788.2001.00321.x).
- Iffland, M., Livingstone, N., Jorgensen, M., Hazell, P. and Gillies, D. (2023), "Pharmacological intervention for irritability, aggression, and self-injury in autism spectrum disorder (ASD)", *Cochrane Database of Systematic Reviews*, Vol. 2023 No. 10, doi: [10.1002/14651858.CD011769.pub2](https://doi.org/10.1002/14651858.CD011769.pub2).
- Im, D.S. (2021), "Treatment of aggression in adults with autism spectrum disorder: a review", *Harvard Review of Psychiatry*, Vol. 29 No. 1, pp. 35-80, doi: [10.1097/HRP.0000000000000282](https://doi.org/10.1097/HRP.0000000000000282).
- Kalachnik, J.E., Leventhal, B.L., James, D.G., Sovner, R., Kastner, T.A., Walsh, I.C. and Klitzke, M.G. (1995), "Guidelines for the use of psychotropic medication", Paper presented at the International Consensus Conference on Psychopharmacology, The OH State University, Columbus, OH.
- King, B.H. and Davanzo, P. (1996), "Buspirone treatment of aggression and self-injury in autistic and nonautistic persons with severe mental retardation", *Developmental Brain Dysfunction*, No. 90, pp. 22-31.
- Kleijwegt, B., Puijssers, A., de Jong-Bakker, L., de Haan, K., van Os-Medendorp, H. and van Meijel, B. (2019), "Support staff's perceptions of discontinuing antipsychotics in people with intellectual disabilities in residential care: a mixed-method study", *Journal of Applied Research in Intellectual Disabilities*, Vol. 32 No. 4, pp. 861-870, doi: [10.1111/jar.12577](https://doi.org/10.1111/jar.12577).
- Koritsas, S., Iacono, T., Hamilton, D. and Leighton, D. (2008), "The effect of active support training on engagement, opportunities for choice, challenging behaviour and support needs", *Journal of Intellectual & Developmental Disability*, Vol. 33 No. 3, pp. 247-256, doi: [10.1080/13668250802282944](https://doi.org/10.1080/13668250802282944).
- Kwok, H., Chui, E. and Tang, A. (2010), "Prescribing psychotropic medication for problem behaviours in adults with intellectual disabilities in a specialist psychiatric unit in Hong Kong", *Advances in Mental Health and Intellectual Disabilities*, Vol. 4 No. 3, pp. 27-33.
- Lemieux, A.J., Bodryzlova, Y., Braconnier, M.J., Robert Berger, E., Pinard, G., Morin, D. and Crocker, A. G. (2025), "Vers une optimisation des trajectoires de services pour les personnes autistes ou présentant une déficience intellectuelle et des comportements violents: une recension internationale", Montréal, Québec (Canada) Institut national de psychiatrie légale Philippe-Pinel.
- Levac, D., Colquhoun, H. and O'Brien, K.K. (2010), "Scoping studies: advancing the methodology", *Implementation Science*, Vol. 5 No. 1, p. 69, doi: [10.1186/1748-5908-5-69](https://doi.org/10.1186/1748-5908-5-69).
- Luiselli, J.K., Trembl, T., Kane, A. and Young, N. (2009), *Physical Restraint Intervention: Case Report Evaluation of an Implementation-Reduction Strategy and Long Term Outcome*.
- McCarney, R., Warner, J., Iliffe, S., van Haselen, R., Griffin, M. and Fisher, P. (2007), "The Hawthorne effect: a randomised, controlled trial", *BMC Medical Research Methodology*, Vol. 7 No. 1, p. 30, doi: [10.1186/1471-2288-7-30](https://doi.org/10.1186/1471-2288-7-30).
- McConkey, R. (2024), "The institutionalization of people with intellectual disabilities: a never-ending story", Preprint. doi:[10.20944/preprints202405.0453.v1](https://doi.org/10.20944/preprints202405.0453.v1)
- Marshall, T. (2004), "Audit of the use of psychotropic medication for challenging behaviour in a community learning disability service", *Psychiatric Bulletin*, Vol. 28 No. 12, pp. 447-450.
- Matson, J.L. and Neal, D. (2009), "Psychotropic medication use for challenging behaviors in persons with intellectual disabilities: an overview", *Research in Developmental Disabilities*, Vol. 30 No. 3, pp. 572-586, doi: [10.1016/j.ridd.2008.08.007](https://doi.org/10.1016/j.ridd.2008.08.007).
- Modi, M., McMorris, C., Palucka, A., Raina, P. and Lunskey, Y. (2015), "Predictors of specialized inpatient admissions for adults with intellectual disability", *American Journal on Intellectual and Developmental Disabilities*, Vol. 120 No. 1, pp. 46-57, doi: [10.1352/1944-7558-120.1.46](https://doi.org/10.1352/1944-7558-120.1.46).
- Mohr, C., Tonge, B.J., Taffe, J., Rymill, A., Collins, D., Keating, C. and Einfeld, S.L. (2011), "Inter-rater reliability of the developmental behaviour checklist for adults in community accommodation settings", *Journal of Intellectual Disability Research*, Vol. 55 No. 7, pp. 710-713, doi: [10.1111/j.1365-2788.2010.01372.x](https://doi.org/10.1111/j.1365-2788.2010.01372.x).
- National Institute for Health and Care Excellence (2015a), "Challenging behaviour and learning disabilities: prevention and interventions for people with learning disabilities whose behaviour challenges", *NICE guideline [NG11]*, available at: www.nice.org.uk/guidance/ng11

National Institute for Health and Care Excellence (2015b), "Violence and aggression: short-term management in mental health, health and community settings", *NICE guideline NG10*, available at: www.nice.org.uk/guidance/ng10/chapter/Implementation-getting-started

National Institute for Health and Care Excellence (2019), "Learning disability: behaviour that challenges. NICE quality standard QS101", available at: www.nice.org.uk/guidance/qs101

Newman, C., Roche, M. and Elliott, D. (2021), "Exposure to workplace trauma for forensic mental health nurses: a scoping review", *International Journal of Nursing Studies*, Vol. 117, p. 103897, doi: [10.1016/j.ijnurstu.2021.103897](https://doi.org/10.1016/j.ijnurstu.2021.103897).

Nicolardi, V., Fanizza, I., Accogli, G., Macchitella, L., Scoditti, S. and Trabacca, A. (2023), "Pain assessment in autism: updating the ethical and methodological challenges through a state-of-the-art review", *Neurological Sciences*, Vol. 44 No. 11, pp. 3853-3861, doi: [10.1007/s10072-023-06942-2](https://doi.org/10.1007/s10072-023-06942-2).

Okorie, E. and Connaughton, C. (2011), "Antipsychotic prescribing in a residential facility for clients with learning disability", *The British Journal of Development Disabilities*, Vol. 57 No. 113, pp. 117-122.

Olivier-Pijpers, V.C., Cramm, J.M. and Nieboer, A.P. (2019), "Influence of the organizational environment on challenging behaviour in people with intellectual disabilities: professionals' views", *Journal of Applied Research in Intellectual Disabilities*, Vol. 32 No. 3, pp. 610-621, doi: [10.1111/jar.12555](https://doi.org/10.1111/jar.12555).

Peters, M.D.J., Godfrey, C., McInerney, P., Munn, Z., Tricco, A.C. and Khalil, H. (2020), "Chapter 11: scoping reviews", in Aromataris, E. and Munn, Z. (Eds), *JBIManual for Evidence Synthesis*, Joanna Briggs Institute.

Pollock, D., Peters, M.D.J., Khalil, H., McInerney, P., Alexander, L., Tricco, A.C., ... Munn, Z. (2023), "Recommendations for the extraction, analysis, and presentation of results in scoping reviews", *JBIM Evidence Synthesis*, Vol. 21 No. 3, pp. 520-532, doi: [10.11124/jbies-22-00123](https://doi.org/10.11124/jbies-22-00123).

Prior, D., Win, S., Hassiotis, A., Hall, I., Martiello, M.A. and Ali, A.K. (2023), "Behavioural and cognitive-behavioural interventions for outwardly directed aggressive behaviour in people with intellectual disabilities", *Cochrane Database of Systematic Reviews*, Vol. 2023 No. 2, doi: [10.1002/14651858.CD003406.pub5](https://doi.org/10.1002/14651858.CD003406.pub5).

Royal College of Psychiatrists (1993), "Consensus statement on the use of high dose antipsychotic medication".

Royston, R., Naughton, S., Hassiotis, A., Jahoda, A., Ali, A., Chauhan, U., Cooper, S.A., Kouroupa, A., Steed, L., Strydom, A., Taggart, L. and Rapaport, P. (2023), "Complex interventions for aggressive challenging behaviour in adults with intellectual disability: a rapid realist review informed by multiple populations", *Plos One*, Vol. 18 No. 5, p. e0285590, doi: [10.1371/journal.pone.0285590](https://doi.org/10.1371/journal.pone.0285590).

Russell, A. (1984), "Reflections on the current psychiatric consultation and referral pattern and on the state of the art, at oxford regional centre, an adult mental retardation facility", *The Canadian Journal of Psychiatry*, Vol. 29 No. 4, pp. 306-311, doi: [10.1177/070674378402900405](https://doi.org/10.1177/070674378402900405).

Saloviita, T. (2002), "Challenging behaviour, and staff responses to it, in residential environments for people with intellectual disability in Finland", *Journal of Intellectual & Developmental Disability*, Vol. 27 No. 1, pp. 21-30.

Sanders, K. (2009), "The effects of an action plan, staff training, management support and monitoring on restraint use and costs of work-related injuries", *Journal of Applied Research in Intellectual Disabilities*, Vol. 22 No. 2, pp. 216-220.

Sequeira, H. and Halstead, S. (2001), "Is it meant to hurt, is it?: management of violence in women with developmental disabilities", *Violence Against Women*, No. 7, pp. 462-476.

Smith, J., Baksh, R.A., Hassiotis, A., Sheehan, R., Ke, C., Wong, T.L.B. and Strydom, A. (2022), "Aggressive challenging behavior in adults with intellectual disability: an electronic register-based cohort study of clinical outcome and service use", *European Psychiatry*, Vol. 65 No. 1, p. e74, doi: [10.1192/j.eurpsy.2022.2336](https://doi.org/10.1192/j.eurpsy.2022.2336).

Stancliffe, R.J., Hayden, M.F. and Lakin, K.C. (1999), "Effectiveness of challenging behavior IHP objectives in residential settings: a longitudinal study", *Mental Retardation*, Vol. 37 No. 6, pp. 482-493, doi: [10.1352/0047-6765\(1999\)037<0482:EOCBIO>2.0.CO;2](https://doi.org/10.1352/0047-6765(1999)037<0482:EOCBIO>2.0.CO;2).

Stancliffe, R.J., McVilly, K., Radler, G., Mountford, L. and Tomaszewski, P. (2010), "Active support, participation and depression", *Journal of Applied Research in Intellectual Disabilities*, Vol. 23 No. 4, pp. 312-321.

- Stevenson, C., Rajan, L., Reid, G., Melville, C., McGilp, R. and Cooper, S.A. (2004), "Withdrawal of antipsychotic drugs from adults with intellectual disabilities", *Irish Journal of Psychological Medicine*, Vol. 21 No. 3, pp. 85-90, doi: [10.1017/S0790966700008417](https://doi.org/10.1017/S0790966700008417).
- Stolker, J.J., Heerdink, E.R., Leufkens, H.G., Clercx, M.G. and Nolen, W.A. (2001), "Determinants of multiple psychotropic drug use in patients with mild intellectual disabilities or borderline intellectual functioning and psychiatric or behavioral disorders", *General Hospital Psychiatry*, Vol. 23 No. 6, pp. 345-349, doi: [10.1016/s0163-8343\(01\)00164-5](https://doi.org/10.1016/s0163-8343(01)00164-5).
- Stolker, J.J., Koedoot, P.J., Heerdink, E.R., Leufkens, H.G. and Nolen, W.A. (2002), "Psychotropic drug use in intellectually disabled group-home residents with behavioural problems", *Pharmacopsychiatry*, Vol. 35 No. 1, pp. 19-23, doi: [10.1055/s-2002-19838](https://doi.org/10.1055/s-2002-19838).
- Tenneij, N.H. and Koot, H.M. (2008), "Incidence, types and characteristics of aggressive behaviour in treatment facilities for adults with mild intellectual disability and severe challenging behaviour", *Journal of Intellectual Disability Research*, Vol. 52 No. 2, pp. 114-124, doi: [10.1111/j.1365-2788.2007.00968.x](https://doi.org/10.1111/j.1365-2788.2007.00968.x).
- The Ontario Association for Behavioural Analysis (2019), "Evidence-based practices for treatment of challenging behaviour in people with intellectual and developmental disabilities: recommendations for caregivers, practitioners and policymakers".
- Thomas, C., Kitchen, D. and Smith, A. (2005), "The management of aggression care plans: implementation and efficacy in a forensic learning disability service", *The British Journal of Forensic Practice*, Vol. 7 No. 2, pp. 3-9.
- Tsakanikos, E., Costello, H., Holt, G., Sturmey, P. and Bouras, N. (2007), "Behaviour management problems as predictors of psychotropic medication and use of psychiatric services in adults with autism", *Journal of Autism and Developmental Disorders*, Vol. 37 No. 6, pp. 1080-1085.
- Tyrer, P., Tarabi, S.A., Bassett, P., Liedtka, N., Hall, R., Nagar, J., Imrie, A. and Tyrer, H. (2017), "Nidotherapy compared with enhanced care programme approach training for adults with aggressive challenging behaviour and intellectual disability (NIDABID): cluster-randomised controlled trial", *Journal of Intellectual Disability Research*, Vol. 61 No. 6, pp. 521-531, doi: [10.1111/jir.12360](https://doi.org/10.1111/jir.12360).
- Tyrer, P., Oliver-Africano, P.C., Ahmed, Z., Bouras, N., Cooray, S., Deb, S., Murphy, D., Hare, M., Meade, M., Reece, B., Kramo, K., Bhaumik, S., Harley, D., Regan, A., Thomas, D., Rao, B., North, B., Eliahoo, J., Karatela, S., Soni, A. and Crawford, M. (2008), "Risperidone, haloperidol, and placebo in the treatment of aggressive challenging behaviour in patients with intellectual disability: a randomised controlled trial", *The Lancet*, Vol. 371 No. 9606, pp. 57-63, doi: [10.1016/S0140-6736\(08\)60072-0](https://doi.org/10.1016/S0140-6736(08)60072-0).
- Verhoeven, W.M. and Tuinier, S. (1996), "The effect of buspirone on challenging behaviour in mentally retarded patients: an open prospective multiple-case study", *Journal of Intellectual Disability Research*, Vol. 40 No. 6, pp. 502-508, available at: www.ncbi.nlm.nih.gov/pubmed/9004110
- Wheeler, J., Holland, A., Bambrick, M., Lindsay, W., Carson, D., Steptoe, L., Johnston, S., Taylor, J.L., Middleton, C., Price, K. and O'Brien, G. (2009), "Community services and people with intellectual disabilities who engage in anti-social or offending behaviour: referral rates, characteristics, and care pathways", *Journal of Forensic Psychiatry & Psychology*, Vol. 20 No. 5, pp. 717-740.
- Williams, D.E. (2010), "Reducing and eliminating restraint of people with developmental disabilities and severe behavior disorders: an overview of recent research", *Research in Developmental Disabilities*, Vol. 31 No. 6, pp. 1142-1148, doi: [10.1016/j.ridd.2010.07.014](https://doi.org/10.1016/j.ridd.2010.07.014).

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Supplementary material

The supplementary material for this article can be found online.

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