Development and Clinical Implications of the Adult Attachment Behaviours Inventory for Intellectual Disabilities (AABI-ID): A Study in Residential Care Settings

Abstract

Background: Residential care settings can prompt adults with intellectual disabilities to exhibit attachment behaviours towards care staff. This study explored the psychometric properties of the Adult Attachment Behaviours Inventory for Intellectual Disabilities (AABI-ID). We also examined the association between attachment behaviours and adaptive and behavioural profiles and reflected on the clinical use of the AABI-ID.

Methods: The AABI-ID aims to assess the presence and selectivity of attachment-related behaviours in adults with intellectual disabilities towards care professionals. In this study, it was completed for 152 adults. Individual support workers (ISWs) and other support workers (OSWs) provided ratings alongside assessments of adaptive and challenging behaviours.

Results: Results indicated excellent internal consistency and good test−retest reliability. Differential profiles were observed in ISWs and OSWs. Furthermore, significant positive associations were identified with the Vineland Adaptive Behaviour Scales, Second Edition and Behavior Problems Inventory.

Conclusions: The AABI-ID appears to be a promising tool for fostering professional reflexivity and enhancing the integration of attachment behaviours in daily clinical practice.

Keywords: Attachment, attachment behaviours, intellectual disabilities, inventory, residential care settings

Lay Summary

- Some adults with intellectual disabilities look for comfort and closeness from the people who support them, especially when they feel scared or unsure. These are called attachment behaviours.
- We created a new tool called the AABI-ID to help support workers notice and understand these behaviours in the adults they work with.
- We found that this tool gives reliable results and can be used with confidence in real support settings.
- Adults who showed more attachment behaviours also tended to have better social skills. Some also showed behaviours that can be difficult to understand, such as hitting out, repeating the same actions, or hurting themselves.
- Knowing about a person's attachment behaviours can help support workers respond in kinder, more helpful ways. For example, understanding why someone needs reassurance or finds it hard when a familiar person is not around.

Introduction

Intellectual disability is a neurodevelopmental disorder characterised by limitations in intellectual and adaptive functioning that encompasses conceptual, practical, and social skills. These limitations usually manifest during the developmental period, according to international diagnostic frameworks (International Classification of Diseases 11th Revision (ICD-11); World Health Organization, 2019), or before the age of 22 years (American Association on Intellectual and Developmental Disabilities (AAIDD); Schalock et al., 2021)). Individuals with intellectual disabilities often experience difficulties in communicating emotions and needs, making them further reliant on external support. They are frequently placed in environments that do not necessarily meet their emotional needs, such as hospital or residential care. These settings may challenge or disrupt existing attachment networks and can result in reduced individual attention (Clegg & Lansdall-Welfare, 1995; Schuengel et al., 2010). Consequently, research has focused on how these environments impact the emotional, relational, and behavioural well-being of adults with intellectual disabilities living in residential care settings. This growing interest has encouraged professionals to reflect more explicitly on these needs and interpret related observed behaviours in light of underlying emotional needs and relational dynamics. Several theoretical and clinical approaches highlight the importance of emotionally responsive and developmentally attuned caregiving practices (e.g. Došen, 2005; Sappok et al., 2021). Within this broader perspective, attachment theory provides a useful framework for understanding how proximity-seeking, comfort-seeking, and relational expectations may be expressed across the lifespan in residential care contexts.

Although these facilities provide essential support, they also pose risks to emotional security due to high workload, limited individual attention, frequent staff turnover, and discontinuity in caregiver relationships (Clegg & Lansdall-Welfare, 1995; Clegg & Sheard, 2002; Schuengel et al., 2010). Adults with intellectual disabilities may develop attachment relationships with care staff in addition to family and other attachment figures, notably due to frequent proximity and personal care (Lippold & Burns, 2009; Schuengel et al., 2010). Hence, emotional well-being may be largely influenced by the stability and quality of these relationships, particularly for individuals with limited verbal expression or additional sensory, physical, or mental health conditions (Clegg & Lansdall-Welfare, 1995; Rinaldi et al., 2023).

Attachment behaviours are part of a motivational system that promotes proximity-seeking in response to cues signalling real or perceived danger (Bowlby, 1969/1982). These behaviours activate two interconnected systems: the individuals' proximity-seeking system, which includes behaviours such as seeking comfort and expressing distress, and caregivers' caregiving system, which involves providing emotional availability and protection (Bowlby, 1969/1982; Fletcher & Gallichan, 2016). Although qualitative studies have documented attachment behaviours in youth and adults with intellectual disabilities (Clegg & Lansdall-Welfare, 1995; Clegg & Sheard, 2002; De Schipper & Schuengel, 2010; Schuengel et al., 2010), research focused on operationalising these behaviours in a way that supports both empirical investigation and professional practice is lacking. Studies have indicated that attachment behaviours are directed towards specific caregivers who may become attachment figures among youth with intellectual disabilities in day care and residential care settings (De Schipper & Schuengel, 2010) as well as among adults with intellectual disabilities in residential care settings (Rinaldi et al., 2023). However, caregivers' ability to recognise and respond to these signals and promote emotional security may vary (Schuengel et al., 2010).

Furthermore, although all care staff contribute to clients' well-being, not all professionals engage similarly with individuals with intellectual disabilities. Some may develop stronger and more consistent relationships with clients, which can provide important stability in residential care settings with frequent staff changes. These professionals, often referred to as individual support workers (ISWs), may play a key role in sustaining emotional security and fostering attachment behaviours (Rinaldi et al., 2023). They typically provide consistent personalised support through direct care and ongoing interactions. Their designation may vary across institutions and is sometimes informal; however, ISWs contribute to maintaining a stable

relational environment in which attachment behaviours are more likely to be expressed and appropriately addressed. However, their specific impact on attachment dynamics remains insufficiently explored. In the Belgian residential care context, all support workers are trained professionals (educators). Residential services are commonly organised so that each adult with intellectual disabilities is assigned a reference support worker (referred to here as the Individual Support Worker, ISW), who has greater responsibility for that individual. This role typically involves administrative responsibilities, closer follow-up, and regular individual interactions, rather than additional formal training, distinguishing it from the role of other professionals (referred to here as other support workers (OSWs)). OSWs contribute to daily care and support activities but do not hold this coordinating or referent role.

Schuengel et al. (2010) suggested that caregivers in institutional settings must balance providing emotional availability and maintaining professional boundaries. A stable ISW can lead to more structured and directed attachment behaviours, which could facilitate co-regulation and emotional adaptation. Conversely, in institutional settings with high staff turnover or inconsistent relationships, attachment behaviours may be expressed in a more diffuse manner, which can increase the likelihood of distress and behavioural difficulties. Further investigations on how attachment behaviours vary based on the presence of an ISW may offer valuable insights into the relational dynamics that shape emotional security in residential care.

Preliminary data suggest that attachment behaviours in adults with intellectual disabilities may significantly differ from those observed in adults and children with typical development (Clegg & Sheard, 2002; Larson et al., 2011; Rinaldi et al., 2023). Professionals may misinterpret these behaviours, which can lead to a lack of appropriate responses to clients' underlying emotional needs (Rinaldi et al., 2023). Additionally, adults with intellectual disabilities may experience unstable attachment networks and may have limited access to consistent attachment figures, which makes the caregiving environment a crucial factor in their emotional security (Clegg & Lansdall-Welfare, 1995; Schuengel et al., 2010). In the absence of appropriate responses, these unmet needs can contribute to maladaptive coping mechanisms or be misconstrued as inappropriate or challenging behaviours (Rinaldi et al., 2023).

Therefore, care professionals require structured guidance to effectively identify and respond to attachment behaviours to foster emotional security. A key component is co-regulation, in which caregivers support individuals in managing emotional distress through attuned responses and predictable relational environments (Sappok et al., 2020). Adults with intellectual disabilities often rely on external regulation due to difficulties with self-regulation, making professional responsiveness essential for stress management (Sappok et al., 2016). However, caregivers may struggle to differentiate attachment behaviours from other forms of distress, which can lead to either failure to provide adequate emotional support or inadvertently reinforce dependence (Sappok et al., 2020).

Several tools have been developed to assess attachment-related processes in individuals with intellectual disabilities. The Secure Base and Safe Haven Observation (SBSHO) tool (De Schipper et al., 2006) focuses on the observation of secure attachment behaviours, primarily in children and young people with intellectual disabilities, and allows assessments of selective behaviours toward support workers. Meanwhile, the Scale of Emotional Development (SED; Sappok et al., 2016) situates attachment within a broader framework of emotional development rather than assessing attachment-related behaviours directed towards specific caregivers. This tool addresses multiple domains of emotional development, including aspects related to attachment, such as relating to significant others. In addition, the Manchester Attachment Scale (Penketh et al., 2014) provides a third-party assessment of secure attachment patterns but does not specifically address the selectivity of attachment behaviours within professional caregiving relationships. While these instruments have substantially advanced the field, to our knowledge, none were specifically designed to capture the presence and selectivity of a range of attachment-related behaviours, without categorising secure or insecure patterns, expressed by adults with intellectual disabilities towards different professional caregivers in everyday residential care contexts.

Hence, structured assessment tools that help professionals identify, interpret, and appropriately respond to attachment behaviours, while balancing co-regulation with autonomy support, are required.

This study introduces the Adult Attachment Behaviours Inventory for Intellectual Disabilities (AABI-ID), a third-party observational tool designed to capture attachment-related behaviours as perceived by support workers in residential care settings. Although the AABI-ID does not assess attachment patterns as organised classifications of attachment security (e.g. secure, avoidant, ambivalent, or disorganised), it focuses on observable behaviours associated with proximity-seeking, comfort-seeking, and responses to separation, a core function of attachment, in caregiving contexts.

The primary objective of this study was to provide initial evidence of the tool's psychometric properties and its clinical relevance in residential care settings. Specifically, we evaluated its internal consistency and test–retest reliability to ensure its robustness in capturing observable attachment-related behaviours in adults with intellectual disabilities. We also examined preliminary construct-relevant evidence through selectivity of attachment behaviours towards support workers, testing whether such behaviours were manifested according to the professional role in residential care settings (ISWs, the assigned referent support workers, who may serve as attachment figures, versus OSWs). More broadly, this approach enabled us to examine whether adults with intellectual disabilities in residential care display attachment-related behaviours towards professional caregivers and whether these behaviours are expressed selectively.

In addition, we explored associations between AABI-ID scores and external variables, namely adaptive functioning (assessed using the Vineland Adaptive Behaviour Scales, Second Edition (VABS-II)) and challenging behaviours (assessed using the Behavior Problems Inventory (BPI)), to examine how reported attachment behaviours relate to individuals' behavioural and adaptive profiles. Since attachment behaviours were conceptualised as adaptive mechanisms in response to stress and perceived security (Janssen et al., 2002; Schuengel et al., 2010), identifying these associations could contribute to a better understanding of how attachment needs interact with broader behavioural and emotional regulation processes in residential care.

Based on attachment theory, we hypothesised that attachment-related behaviours assessed with the AABI-ID would be expressed selectively rather than indiscriminately. Specifically, behaviours were expected to differ according to the professional role of the caregiver, with higher presence of attachment-related behaviours towards the ISW compared with OSW. We further hypothesised that attachment-related behaviours would be associated with individuals' behavioural and adaptive profiles.

Methods

Conception and description of the AABI-ID

The AABI-ID was developed following established guidelines for scale development (DeVellis & Thorpe, 2022). Items were generated based on a previous qualitative study on attachment behaviours in adults with intellectual disabilities in residential care settings (Rinaldi et al., 2023), and informed by attachment theory (Bowlby, 1969/1982). The initial item pool was reviewed by a panel of professionals with expertise in developmental psychopathology and intellectual disabilities, leading to the final pilot version of the instrument.

The AABI-ID is a third-party assessment of attachment-related behaviours of adults with intellectual disabilities towards their professional caregivers. It was completed by an informant, typically a direct care staff member who has known the adult for >6 months. It comprised 22 items presented in pairs (items a and b). Each pair contained the same statement but from the perspective of the informant (items a) or their coworkers (items b), allowing for the assessment of the selectivity of attachment-related behaviours. Each item was rated on a 7-point Likert scale based on the adults' typical behaviours over the past two months. The scoring system and pair display were inspired by the SBSHO list (De Schipper et al., 2006), as this instrument addressed similar dimensions (attachment behaviours) in a similar population (young people

with intellectual disabilities). Total scores were calculated in three ways: total of items a, total of items b, and overall score (addition of 'total of items a' and 'total of items b'). A high overall score suggested that adults with intellectual disabilities typically exhibited more attachment-related behaviours towards professionals, either the informant (total A) or their colleagues (total B). Because the AABI-ID was not designed to differentiate between secure and insecure attachment patterns, the overall score was interpreted as reflecting the presence of attachment-related behaviours characteristic of the individual in interactions towards support workers, regardless of whether these behaviours are commonly described as secure or insecure.

A description of the development process and the full version of the AABI-ID are provided in the Supplementary Materials and may be freely used for research and clinical purposes with appropriate citation.

Sample and data collection

Participants were recruited from 20 residential care settings via convenience sampling. Professionals completed the AABI-ID for 152 adults with intellectual disabilities (**Table 1**).

Information letters were emailed to various residential care settings in Belgium. A meeting was scheduled with the professionals upon agreement to explain the study's aims and procedure. Interested professionals were contacted individually to schedule personal appointments within their workplace.

Data were collected in 2–3 stages (see **Figure 1)**. During the first meeting, the research objectives and concept of attachment behaviours were explained to the informant (support worker). Furthermore, information regarding the informant and the adult for whom the inventory was completed was obtained. Subsequently, the informant completed the AABI-ID. Additional measures (adaptive and behavioural) were also obtained. Finally, informants (ISW and OSW) completed the AABI-ID again for the same adult during a third meeting 4–8 weeks after the first completion to assess test−retest reliability.

Inclusion criteria for the informant were (1) being a professional who was frequently and directly in contact with the adult with an intellectual disability (direct support staff), (2) who worked within the same residential care settings at least part-time and for at least 1 year, and (3) who was on a daytime or 'mixed' schedule (day and night shifts). Inclusion criteria for adults with intellectual disabilities were (1) aged at least 22 years and (2) diagnosed with mild-to-profound intellectual disability. Assessment of the severity of intellectual disability was based on the official clinical diagnosis documented in institutional records. No independent diagnostic reassessment was conducted for the purposes of this study. Informants were free to select the adult for whom they would complete the inventory, VABS, and BPI, after they met the inclusion criteria. To observe potential variability in attachment-related behaviours towards professional caretakers, informants responded for an adult with intellectual disability for whom they were the ISW. It was hypothesised that these professionals would be more likely to be considered selective attachment figures by adults with intellectual disabilities and be the focus of their attachment-related behaviours. For a proportion of the data, it was also proposed that another professional (OSW), not an ISW, would also complete the AABI-ID for the same adult (**Table 2**).

Ethical considerations

Informed consent was obtained from all participating support workers, who were the sole respondents in the study. The research relied exclusively on third-person reports of attachment-related behaviours and did not involve direct contact, interaction, or data collection from adults with intellectual disabilities. The AABI-ID was completed by support workers in a separate room, in the absence of the adults concerned, and was based on their existing professional knowledge derived from everyday care and routine observations, rather than on observations conducted specifically for research purposes. Although adults with intellectual disabilities were not directly approached, were not active participants, and did not provide data themselves, the study involved staff-reported information about them. In line with guidance from the

institutional ethics committee, their informed consent was therefore not required. Nevertheless, the study was designed to minimise intrusion and respect individual's privacy. Data were managed in (pseudo)anonymous and aggregate form in compliance with the European General Data Protection Regulation. Alpha-numeric code replaced participants' names, ensuring that the researchers could not trace the individuals' identities. This study was approved by the Ethical Committee of the University of Mons.

Other data collection

The French version of the BPI (Rojahn et al., 2001) was used to assess the presence of challenging behaviours in adults with intellectual disabilities over the past two months. This third-party inventory comprised 52 items divided into three subscales: self-injurious, stereotyped, and aggressive-destructive behaviours. Items were assessed for frequency and severity on a 4-point Likert scale. The VABS-II (Sparrow et al., 2005) was used to assess adaptive functioning, divided into four domains: communication, daily living skills, socialisation, and motor skills. It was administered as an interview.

Data analysis

JASP version 0.18.3. was used for data analysis. Data were inspected, assumptions were assessed, and appropriate tests were conducted. Descriptive statistics were calculated for all the variables of interest to summarise their central tendencies and dispersion. Internal consistency was assessed via McDonald's omega, computed separately for items referring to the informant main support worker (items A) and items referring to colleagues (items B), based on the ISW's first completion (n=152). Internal consistency was not computed on the combined A and B items, as item duplication across targets may artificially inflate reliability estimates. The Shapiro−Wilk test indicated significant deviations from normality, except for the total score of B and total score for the OSW. We used the Wilcoxon signed-rank test to test differentiation (selectivity) in attachment-relevant behaviours between ratings referring to the ISW (items A) and the OSW (items B) on the first completion of the AABI-ID, as preliminary construct-relevant evidence. Test−retest reliability was evaluated via Bravais−Pearson correlation coefficients between the two completions (for ISW and OSW). Spearman's Rho was used to analyse the correlation between the BPI and VABS raw scores on the ISW's first AABI-ID completion. Influence of the degree of intellectual disabilities on the AABI-ID total score (first completion of the ISW) was evaluated via a Kruskal–Wallis test, as our data deviated from linearity. Sample size was calculated using G*Power (version 3.1.9.7) for general hypothesis assessment. For the Wilcoxon signed-rank test, an equivalent paired sample t-test was used to estimate the required sample size. Based on a medium effect size (dz = 0.5), $\alpha = .05$, and power of 0.80, a minimum of 34 participants was sufficient. For Pearson and Spearman's correlations, an expected medium effect size (r = .3) required approximately 84 participants. Thus, our sample size of 152 was appropriate to detect medium-sized correlations.

Results

Internal consistency of the AABI-ID

Internal consistency was excellent for items referring to the informant and main support (items A; McDonald's $\omega = .94$) and for items referring to colleagues (items B; McDonald's $\omega = .94$), based on the ISW's first completion.

Test-retest reliability

Our results for ISW demonstrated significant positive correlations between the test and re-test scores for the AABI-ID total (r=.809, $p<.001$) and total of items A (r=.848, $p<.001$) and B (r=.759, $p<.001$). These results were replicated for OSW, with significant positive correlations between the test and re-test scores for the AABI-ID total (r=.813, $p<.001$) and total of items A (r=.798, $p<.001$) and B (r=.808, $p<.001$). These findings support the reliability of the AABI-ID as a repeated measure.

Test of selectivity: Differences between items A and B

Table **3** presents the descriptive statistics of the AABI-ID for items A and B for ISWs and OSWs (during the first completion). Results indicated a significant difference between items A (behaviours directed towards the informant themself) and B (informant's colleagues) total scores among both ISWs (W= 7094, p<.001) and OSWs (W=374.5, p<.001). However, the direction of the difference was inverted for OSWs compared with ISWs, which indicated that ISWs tended to attribute more behaviours towards themselves, while OSWs towards colleagues (**Figure 2**). Following the Wilcoxon test, we measured the effect sizes via a rank bi-serial correlation. We obtained effects sizes of r = .773 and -.628 for ISWs and OSWs, respectively. For both, the results indicated a large effect size. Thus, results for OSWs suggested that score B was higher than score A, and the opposite was true for ISWs. This systematic differentiation between ISW and OSW ratings suggests that the AABI-ID is sensitive to staff-reported selective attachment-related behaviours directed towards specific caregivers.

Association with behavioural and adaptive characteristics

Severity of intellectual disability was recorded based on the official clinical diagnosis documented in the individual's institutional records, which had been established by qualified professionals as part of multidisciplinary assessment. The research team did not conduct independent diagnostic assessments, nor was reclassification of severity undertaken for the purposes of this study. Since severity of intellectual disability was reported by informants and not directly assessed, we considered the correlation between the severity of intellectual disabilities and raw total of VABS-II scores. Spearman's correlations yielded a significant negative correlation between this score and severity of intellectual disability (ρ=-.691, p<.001).

The Kruskal–Wallis test did not reveal significant differences in the degree of intellectual disability across the groups (statistic = 4.491, df = 3, p = .213). Furthermore, the post-hoc Dunn's test confirmed no effect of the severity of intellectual disability on the variance of our score.

Significant positive correlations were observed between the AABI-ID total score and VABS raw scores for the daily living (ρ=.265, p=.001), communication (ρ=.200, p<.05), and socialisation (ρ=.216, p<.01) domains and total raw score (ρ=.244, p<.01). To account for multiple comparisons across the three VABS domains scores, a Bonferroni-adjusted significance threshold was applied (α = .05/3 = .0167). Under this adjusted threshold, the associations with daily living skills and socialisation remained statistically significant. The analysis involving the VABS total score was not adjusted for multiple comparisons.

Significant positive correlations were also observed between the AABI-ID total and both frequency (ρ=.230, p=.005) and severity (ρ=.264, p=.001) of aggressive-destructive behaviours. Correlations with stereotyped and self-injurious behaviours were not significant.

Reflective use of the AABI-ID

Although not part of formal qualitative data collection, discussions with support workers during AABI-ID completion provided valuable insights into their relational and emotional experiences and they offered meaningful perspectives that aligned with our clinical aims. The structured format of the instrument served as a concrete anchor for reflection, facilitating the identification of attachment-related behaviours and their selectivity towards specific caregivers. It also supported discussion of the emotional and professional implications of these dynamics within caregiving teams.

To illustrate this reflective use, two clinical vignettes are presented in the Supplementary Materials.

Discussion

This study introduced the AABI-ID, a third-party observational tool designed to document attachment-related behaviours as perceived and reported by support workers in residential care settings, and analysed

its psychometric properties, with a particular focus on reliability. Furthermore, we examined how it could support professionals in reflecting on behavioural patterns and relational dynamics in daily practice.

The theory-driven item construction process provides preliminary construct-relevant evidence. The design of the AABI-ID was based on attachment theory and previous study on attachment in individuals with intellectual disability (Rinaldi et al., 2023). Generated items were reviewed and adapted by a multidisciplinary committee to ensure their relevance and observability for adults with intellectual disabilities living in residential care settings.

The interpretation of the AABI-ID is grounded in a structured conceptual rationale. First, items were developed from the functional definition of the attachment system, focusing on proximity-seeking, protest against separation in response to cues signalling real or perceived danger, and orientation towards a specific caregiver in times of need. Second, the paired A/B structure of the instrument allowed examination of behavioural specificity by comparing behaviours directed towards a designated referent support worker (ISW) versus OSWs. Third, the observed systematic differentiation between ISW and OSW ratings is consistent with theoretical expectation of selectivity. Although convergent and discriminant validity were not examined, the theoretical grounding and observed role-related differentiation support the preliminary interpretation that the AABI-ID captures attachment-related behaviours.

Regarding preliminary psychometric properties, statistical analysis demonstrated excellent internal consistency for both A and B items at the first completion by the ISW, indicating that each set of items reliably captured a coherent behavioural domain related to attachment behaviours. Internal consistency was calculated separately for the A and B item sets; therefore, reliability pertains to these scores independently. Strong and significant correlations between the administrations of the AABI-ID indicated good test−retest reliability and result stability over time, both from ISW and OSW administrations.

Results suggest that support workers reported behaviours displayed by adults with intellectual disabilities that were consistent with attachment-related behaviours, towards both their ISW and OSW in residential care settings. This finding aligns with previous results (Clegg & Lansdall-Welfare, 1995; Clegg & Sheard, 2002; De Schipper & Schuengel, 2010; Rinaldi et al., 2023), highlighting the relevance of attachment theory in understanding relational dynamics in adults with intellectual disabilities in residential settings. De Schipper and Schuengel's (2010) study on children with intellectual disabilities was one of the few that explored attachment behaviours at the individual level via the SBSHO list. Recently, Rinaldi et al. (2023) highlighted that support workers reported attachment behaviours from adults with intellectual disabilities; however, some behaviours considered for children were not systematically considered for adults; thus, some attachment behaviours were interpreted differently owing to an adult status. For example, behaviours such as seeking physical closeness (e.g. asking for a hug or holding a caregiver's hand) are typically viewed as developmentally expected and readily interpreted as attachment behaviours in children, whereas in adults with intellectual disabilities, such behaviours may be perceived as less normative due to adult status and social expectations, and thus interpreted differently unless their relational function is explicitly considered. Therefore, this study contributes to existing literature by providing a systematic and theory-informed assessment of various behaviours, offering a further comprehensive perspective to support and extend existing data, specifically in adults.

From an attachment theory perspective, selectivity towards a specific caregiver in times of need is a defining feature of attachment relationships. Moreover, as detailed in previous literature, ISWs, through their specific roles with one or more adults with intellectual disabilities, build a trustful relationship and develop knowledge of the client and their needs, which foster selective attachment (Rinaldi et al., 2023; Schuengel et al., 2010).

In this study, results indicated a systematic differentiation in reported attachment-related behaviours according to professional role. ISWs reported significantly higher levels of attachment behaviours directed towards themselves, whereas OSWs reported higher levels of such behaviours towards other staff members,

most plausibly ISWs. This mirrored pattern across informants is consistent with the organisation of caregiving roles in residential settings and theoretical expectations regarding selective attachment relationships.

Rather than providing definitive evidence, this pattern provides preliminary support for the construct validity of the AABI-ID, suggesting that the instrument may be sensitive to selective attachment-relevant behaviours directed towards specific caregivers. Importantly, theoretical coherence should not be equated with full construct validation. While the observed selectivity is consistent with attachment theory and supports the construct-relevant functioning of the AABI-ID, future studies incorporating direct behavioural observations or established relational measures will be necessary to further strengthen this interpretation.

ISWs, through their consistent presence, emotional availability, and continuity of care, are more likely to function as salient relational figures. Conversely, OSWs, who are often less continuously involved, may recognise ISWs as central attachment figures and accordingly attribute attachment behaviours towards them. Taken together, these findings suggest that differences between ISW and OSW ratings are best understood as reflecting relational selectivity within structured caregiving roles.

While this pattern is consistent with expectations regarding selectivity of attachment, alternative explanations such as perceptual or reporting biases should be considered. ISWs' closer relational involvement may heighten their sensitivity to certain behaviours or influence how behaviours are interpreted. These factors warrant further investigation through future studies incorporating observational methods or convergent measures to disentangle relational selectivity from informant effects.

Importantly, the present study primarily addressed reliability (internal consistency and test–retest stability) and examined role-related selectivity as an indirect, construct-relevant indicator of preferential orientation towards specific caregivers. While this pattern is theoretically coherent with attachment-related expectations, it does not constitute a full examination of the measure's validity.

Beyond the issue of role-related differentiation, a broader conceptual question concerns the dimensionality of the AABI-ID. The inclusion of behaviours described in the literature as reflecting both secure and insecure expressions of attachment may raise questions regarding the dimensionality of the instrument. The present study conceptualised these behaviours as reflecting the activation and selectivity of the attachment system in caregiving contexts, rather than organised attachment patterns. However, the underlying structure of the instrument was not examined in this study, and future research should investigate whether a hierarchical or multidimensional structure better represents the organisation of attachment-related behaviours in adults with intellectual disabilities.

Regarding associations with behavioural and adaptive characteristics, exploration of the relationship between the AABI-ID scores and adaptive behaviours (VABS) revealed a significant positive correlation between the AABI-ID total score and VABS total raw score. When examining associations between the AABI-ID total score and VABS domain scores (communication, socialisation, and daily living skills), Bonferroni correction for multiple comparisons was applied ($\alpha = .05/3 = .017$). Following this correction, only the associations with the daily living skills and socialisation domains remained statistically significant. An explanation for these correlations could be that certain daily activities involve relational skills. Daily living activities often involve repeated routines with a specific caregiver (e.g. personal care, dressing, or daily transitions), requiring trust, proximity, and emotional attunement, and may therefore be associated with attachment-related behaviours. In addition, shared activities within residential settings provide opportunities for interaction with familiar and emotionally available caregivers, which may further elicit such behaviours. Regarding socialisation, this domain encompasses interpersonal relationships, including initiating and maintaining contact, expressing emotions appropriately, and seeking proximity or support from familiar others. These abilities may partly converge with, or facilitate, attachment-related behaviours, which may explain the observed association. However, this finding was not confirmed in our analysis of the severity of intellectual disabilities. Findings should therefore be interpreted cautiously, as the sample consisted primarily of individuals with mild-to-moderate intellectual disability. The ordinal nature of

severity levels may have constrained variance, particularly given the sample size. Another possible explanation is that the VABS allows a nuanced assessment of adaptive functioning across domains. Nonetheless, the classification of intellectual disabilities severity reflects adaptive behaviour and other dimensions, such as intellectual functioning; accordingly, these measures remain distinct.

Regarding the association between the AABI-ID and challenging behaviours, a significant positive correlation was observed between the AABI-ID total score and frequency and severity scores of aggressive-destructive behaviours of the BPI. However, no correlations were observed with the frequency and severity of stereotyped and self-injurious behaviours. These results are consistent with preliminary literature indicating an association between some attachment-related constructs and challenging behaviours in adults with intellectual disabilities, as suggested by Rinaldi et al.'s (2022) scoping review. De Schipper and Schuengel's (2010) study focused on children also reported a negative correlation between attachment and challenging behaviours. Nonetheless, their measure (SBSHO) specifically focused on behaviours that indicated secure attachment, which limited comparison with the AABI-ID, which did not differentiate between secure and insecure attachment patterns. For example, the AABI-ID includes behaviours that may reflect heightened or ambivalent attachment-related expressions in adults, such as strong proximity-seeking or efforts to maintain exclusive contact with a specific caregiver (e.g. 'If the client does not receive physical contact from me when he/she is seeking comfort, they may display challenging behaviours (aggressiveness, shouting, crying, standing apart, etc.)' or 'The client may refuse to do something or to share important information unless I am present'). These examples highlight that the AABI-ID documents a broader range of attachment-related expressions, including behaviours that may generate relational complexity within professional care settings, thereby differentiating it from instruments such as the SBSHO that focus primarily on secure base and safe haven behaviours.

Associations between AABI-ID scores and adaptive and challenging behaviours were explored to examine how reported attachment-related behaviours vary according to individuals' functional and behavioural profiles. These analyses were exploratory in nature and were not intended to provide formal tests of convergent or discriminant validity. Further studies combining the AABI-ID with observational methods or established relational measures are needed to examine its specificity.

A possible interpretation of the positive correlation between attachment behaviours and aggressive-destructive behaviours is that such behaviours may reflect difficulties in emotional regulation and unmet relational needs, rather than being solely oppositional or disruptive. Limited access to internal coping strategies can lead to externalised expressions of distress in individuals with intellectual disabilities, particularly when experiencing insecurity, frustration, or the need for closeness (Flachsmeyer et al., 2023; Schuengel et al., 2010).

From a developmental and relational perspective, behaviours often labelled as 'challenging' may represent efforts to seek connection, restore predictability, or signal emotional discomfort during relational uncertainty. This view is also supported by increasing attention towards the impact of adverse life experiences and trauma in people with intellectual disabilities. Exposure to neglect, instability, or violence may compromise emotional security and shape how attachment behaviours are expressed (Skelly et al., 2021).

These perspectives suggest that challenging behaviours and attachment-related expressions may be functionally intertwined. Considering attachment-related behavioural patterns may therefore offer additional insights into behaviours observed in residential care. The AABI-ID may support this reflective and contextualised approach by encouraging support workers to consider attachment-relevant interpretations of behaviour alongside existing behavioural and functional frameworks, situate behaviours within their relational and contextual meaning, and thereby complement current practice with a structured attachment-informed perspective.

Beyond the quantitative results, informal discussions with several support workers during the AABI-ID completion provided valuable insights into their subjective experiences. Although the AABI-ID was initially designed to document attachment-related behaviours, it fostered reflective dialogue regarding the emotional and relational dimensions of caregiving. In several cases, the process created a space for staff to express their cognitive and emotional responses to specific behaviours, particularly when they elicited discomfort or uncertainty.

Limitations

This study has limitations. Although reliability was the primary focus, the AABI-ID was developed within a strong theoretical and methodological framework grounded in attachment theory and clinical practice, providing initial support for its validity. However, convergent and discriminant validity were not tested, and further studies using observational methods or established measures are needed to extend validation. The exploratory nature of the study, the limited literature on the construct, and the lack of validated tools for assessing convergent validity should also be acknowledged. The instrument does not aim to differentiate between secure and insecure attachment patterns, as in measures such as the Attachment Q-Sort (Waters & Deane, 1985), which may limit its applicability in contexts requiring classification of attachment organisation. In addition, the internal structure of the AABI-ID was not examined and should be investigated in future research. The sample predominantly included adults with mild-to-moderate intellectual disabilities, limiting interpretation for those with severe and profound intellectual disabilities. This may be related to the absence of stratified sampling and the self-selection of individuals by professionals. Findings should also be interpreted in light of the specific organisational structure of the residential care settings, where all support workers were trained professionals and each adult was assigned a designated ISW. In service systems with different staffing, role definitions, or relational stability, the expression and selectivity of attachment-related behaviours may vary, limiting generalisability. Finally, differences in scores between ISWs and OSWs require further investigation to determine the clinical utility of the AABI-ID across severity levels of intellectual disabilities.

Perspectives and future directions

Future studies should further explore the attachment behaviours of adults with intellectual disabilities towards support staff and implications of an attachment-informed framework to enhance their interpersonal relationships, interaction quality, and emotional safety. Furthermore, studies should extend our preliminary results and examine the psychometric properties and relevance of the AABI-ID across diverse contexts including hospitals, and even various cultural contexts, with greater inclusion of individuals with intellectual disabilities in the research process. Further research is needed to more fully establish the validity of the AABI-ID. This approach could address environment-specific challenges and considerations of emotional needs within these environments. Future samples should include more adults with severe-to-profound intellectual disabilities as they may express their needs in different ways than those captured by this instrument. Furthermore, future research should investigate the emotional experience of professionals faced with these behaviours via real-time investigation. Finally, the AABI-ID may function as a complementary assessment instrument that supports clinical reflection and discussion among support workers regarding attachment-related behaviours, the relational contexts in which they occur, and their role within the overall relational dynamic. Accordingly, future studies should explore whether actual interactions are modulated directly and ecologically by the presence and intensity of attachment behaviours. These perspectives could pave the way for future studies involving more severely impaired profiles, based on stratified sampling methods and longitudinal designs.

Conclusion

Recently, the need to encourage self-determination and autonomy in people with intellectual disabilities has been emphasised; however, this objective is only possible with a solid base of security. The model of the

four conditions of secure caregiving (Shimmens & Skelly, 2023) explores how a secure base and safe environment enable individuals to explore. As caregivers, acknowledging how the attachment figure can be a refuge and secure base for the care receiver, encouraging them to explore, providing support and help, comforting them, and helping them reorganise their emotions is essential. The AABI-ID can support the structured documentation of staff-reported attachment-relevant behaviours and foster professional reflexivity on attachment-relevant behaviours in adults with intellectual disabilities in residential care settings. This provides new perspectives on both individuals' needs and those of support workers, initiating a reflective process that allows professionals to become aware of their own involvement in the relational dynamic. Therefore, it constitutes an initial step towards the development of further professional and collective efforts aimed at addressing clients' emotional and relational needs while maintaining a clear professional framework and promoting psychological well-being. Overall, the AABI-ID can be understood as a complementary tool to support clinical reflection within a broader attachment-informed framework.

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