Attachment and Challenging Behaviors in Adults with Intellectual Disability: A Scoping Review

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Background: There is a high prevalence of challenging behaviors (CB) in adults with intellectual disability (ID), which lead to negative personal outcomes and diminished quality of life. Emerging evidence suggest attachment theory could be useful to address CB in adults with ID and lower the negative impact on their social environment.

Methods: A scoping review of empirical research on attachment and CB in adults with ID was carried out through Medline, Scopus and Psycinfo databases. One thousand and thirty-five articles were found, fifty-eight articles were screened and seven were included.

Results: There was very limited research on this topic. The main findings were that attachment problems could be positively linked to CB but also to psychological difficulties such as depressive affects and maladaptive coping. Furthermore, it seems that attachment-based interventions may represent an evidence-based strategy to help reduce CB and improve psychological functioning in people with ID and sensorial impairments.

Conclusions: Although preliminary data suggest association between insecure attachment and CB in adults with ID, further research is needed in order to validate and specify these associations. Clinical and empirical future directions are discussed.

Keywords**:** challenging behaviors, intellectual disability, adult, attachment, scoping review

Background

Intellectual disability (ID) is defined as an impairment of both intellectual and adaptive functioning occurring during the developmental period (AAIDD, 2010; American Psychiatric Association, 2013). Regarding these cognitive and adaptative impairments as well as psychosocial and environmental factors (e.g. increased parental distress during childhood, seclusion and lack of social opportunities, limited autonomy even in adulthood, etc.), there are a number of reasons to believe that the prevalence of attachment difficulties could be higher in people with intellectual disabilities (Clegg & Lansdall-Welfare, 1995; Hamadi & Fletcher, 2021; Schuengel, de Schipper, et al., 2013) although accurate estimation of prevalence rates are still relying on the development of reliable and standardized assessments of attachment for people with ID (Hamadi & Fletcher, 2021).

From a psychodynamic perspective, attachment patterns would shape emotional regulation through developmental periods and still influence individual coping and interindividual functioning in adulthood (Ainsworth, et al., 1978; Main & Solomon, 1990). From a cognitive perspective, these can also be linked with one's theory of mind abilities. However, in the mid 90's, Gyorgy Gergely, John Watson, and later, Peter Fonagy, described their theory of social biofeedback of parental affect-mirroring combining psychodynamic and cognitive perspectives. This theory implies that the ability to mentalize is only available for newborns if their caregivers consider them as a thinking individual and, consequently, interact with them (Gergely and Watson, 1996). The repetition of these interaction patterns will lead to the construction of the newborn's first affective representations. It is assumed the infant will express different affective states allowing attachment figures to present it in *a mirror. If this mirroring* occurs regularly and with sufficient temporal contingency (thus as a social biofeedback), it will help the infant to explore his/her own internal affective states. Therefore, a deficit in parental mirroring will affect attachment as well as social-cognitive abilities and

emotional regulation in children, and likely, without any intervention, through adulthood. When this construction is compromised, both subjective mental experience and the interpersonal world make less sense, leaving the individual vulnerable to rapidly changing emotional states and impulsivity. This theory emphasizes the importance to consider attachment patterns from a lifespan perspective and the potential to improve mentalization in various adult clinical populations (Fonagy & Bateman, 2006). According to Schuengel & colleagues (2013), attachment definitions vary along three axes: object, development and quality. Regarding objects, theoretical perspectives distinguish 6 dimensions: attachment behavior (i.e. seeking proximity to a caregiver), attachment relationship (i.e. dyadic history of attachment behavior and response), attachment bond (i.e. the bond can be present, weak, strong,..), attachment style (i.e. anxious, avoidant, secure), attachment representation (i.e. conscious and unconscious rules allowing acces to attachment-related information), and attachment disorder (i.e. atypical social behavior related to a specific disorder acquired during the developmental period).

In their seminal paper, Clegg and Lansdall-Welfare (1995) emphasize that attachment theory provides several concepts and ways to understand the past and present interaction between dyads- not only a child (who may be adult) and his/her parent- through the prism of the quality of relationships. As such, beyond the naturalistic features of attachment in the early period of life, attachment theory also draws the attention to *qualitative social relationships*; that is relationships involving predictability, responsiveness and reciprocity. Their study thoroughly examined the relevance of attachment theory for understanding limited exploration as well as discontinuities in the pattern and intensity of expressions of anger in people with learning disability (LD). Their exploratory study, based on a critical literature review as well as the examination of three clinical cases, provides insight on the (even greater) need for supportive relationships for people with LD as relatively few

individuals become fully independent in daily living. It also sheds light on the challenges encountered by professionals to create and maintain secure attachment relationships in this population, as it is usual for people with LD to direct their attachment behaviors towards care staff.

Since then, there is emerging evidence that attachment theory (referring to the 6 dimensions of attachment mentioned above: *attachment behavior, attachment relationship, attachment bond, attachment style, attachment representation,* and *attachment disorder*) could be useful in clinical practice to manage challenging behaviors (CB) in adults with ID (Janssen, et al., 2002; Hamadi & Fletcher, 2019). CB refer to culturally abnormal behaviors, in terms of intensity, frequency, or duration, which can seriously jeopardize the physical safety of the person or others, or behaviors which are likely to seriously limit the use of, or result in the person being denied access to ordinary community facilities (Emerson & Bromley, 1995). To date, the link between attachment and CB in adults with ID is mostly documented through "indirect" relations that is, through the scope of mental health issues, sometimes more specifically through anxiety and anxiety disorders. For example, moderate association between anxiety and CB have been underlined in people with ID (Pruijssers et al., 2014) and these behaviors are in turn obstructing social relationships (Bowring et al., 2019; Matson, Neal, & Kozlowski, 2012). More specifically, limited or absent object permanence – the ability to understand that being separated from emotionally significant person will be only temporary – in people with severe ID have been hypothesized to contribute to separation anxiety, which could in turn lead to CB because of the distress separation generates (Janssen et al., 2002). Furthermore, Mullen and colleagues (2018) led a systematic literature review on attachment in adults with ID with no specific focus on mental health issues or behavioral consequences of attachment styles within their data extraction process. However, elements

related to CB came out among some of the five studies they selected emphasizing even more the importance to consider the relationships between this construct and attachment.

There is a high prevalence of CB in adults with ID (Balogh, et al., 2005; Bowring, et al., 2019; Schützwohl et al., 2016; Totsika, et al., 2010) which can lead to negative personal outcomes and diminished quality of life with very practical issues such as exclusion from services or, from an institutional perspective, increased reliance on restrictive practices such as seclusion or restraints, which in turn increases caregivers' risks of physical harm and psychological distress (Bowring et al., 2019; Hastings et al., 2013). Therefore, understanding and addressing CB is crucial for service planning and resource funding. In a socioecological perspective, Hastings and colleagues (2013) developed a multidimensional model assuming that CB are generated and maintained by a complex dynamic between *vulnerabilities, maintaining processes,* and *impact. Vulnerabilities* are individual or interindividual risk factors identified for CB in people with ID. Common biological vulnerabilities include underlying sensory or physical problems. Psychosocial vulnerabilities can be numerous, but Hastings and colleagues (2013) identify five main areas: 1) negative life events including traumas and abuse, 2) lack of communication skills, 3) lack of meaningful activity, 4) impoverished social networks, and 5) psychiatric or general mood problems. Bowring and colleagues (2019) add *social* vulnerabilities to this list, such as having negative interactions with staff or inappropriate occupational planning. These areas may interact in a cyclical relationship. However, as any other behavior, CB has a function and functional analysis may help understand why potentially harmful and negative behaviors persist over time (Benson, 2012; Delgado-Casas, et al., 2014). This behavioral approach of CB has been widely used and validated through research on ID (Fritz, et al., 2013; Hanley, et al., 2003; Lehardy, et al., 2013) and represents a gold standard for CB management to date. In addition, some authors suggested that attachment should be considered as a significant variable to understand and

address the issue of CB and therefore limit its multiple negative impact on people with ID as well as their family members, peers, and caregivers (Clegg and Lansdall-Welfare, 1995; Janssen et al., 2002; Mullen et al., 2018, Schuengel et al., 2013).

This scoping review aims to examine if direct associations between CB and attachment have been empirically assessed in adults with ID, to analyze how both constructs are operationalized and to identify gaps in research as well as directions for future studies and clinical interventions. Several questions will be addressed:

1. Is there empirical data supporting association between attachment and CB in adults with ID?
2. What are the methodological options undertaken regarding assessment?
3. Are there any empirically assessed attachment-based interventions dedicated to managing behavioral issues in adults with ID? And what are their outcomes?

Method

Search strategy and eligibility criteria

Scoping reviews are very similar to systematic review in that they follow a structured process. They are indicated to identify the types of evidence in a given field, examine how research is conducted, examine key characteristics or factors related to a concept, and analyze knowledge gaps (Munn et al., 2018; Peters et al., 2015). Based on Mullen's systematic review (2018), it seems reasonable to consider that the body of literature on the association between attachment and CB in adults with ID is fairly limited and that any evidence on this topic has to be considered as emerging.

Thus, a systematic search was carried out in Psycinfo, Medline and Scopus database on 16/03/2021. Search terms included (attachment) and (challenging behav*) and ("intellectual

disability*" or "learning disabilit*" or "mental retardation"). See Figure 1 for a flow diagram of the study selection process. The following eligibility criteria guided study selection which was carried out by two authors (RR and EB) until full agreement:

- English language, peer-reviewed quantitative or qualitative empirical research,
- Involving adults with a diagnosis of ID and/or their caregiver or professional staff member,
- Including attempt to systematically measure or at least consider both attachment and behavioral dimensions.

Experimental studies (with randomized and non-randomized control trials), comparative studies (without concurrent controls) as well as case series and case studies were included. Review papers, studies in progress, unpublished research, or grey literature were excluded. Cochrane and Prospero databases were screened prior to conducting this study, and no concurrent review was found.

Finally, articles suitable for inclusion were further analyzed to ensure that all potentially relevant published work was located, including book chapters and reviews. At the end of this process, inclusion criteria as well as keywords have been considered as validly representing the underlying questions of the review.

Data extraction and summary

A form was created to extract study characteristics including authors, publication year, study design, measures of attachment and CB, additional measures, relevant findings, and limitations. The initial form was filled by one researcher (EB) and checked by a second researcher (RR); any discrepancy was discussed until full agreement. This information is presented in Table 1.

We imported the included studies into NVivo 11, a software program for managing data, and both reviewers (EB and RR) extracted and coded the methodology and results sections of the included studies into seven dimensions (6 dimensions of attachment as defined by Schuengel & colleagues, 2013 and a seventh dimension to consider if the measure of attachment is standardized, unstandardized or clinical) as presented in Table 2. Along with description in the results section, we propose to summarize data extraction and synthesis process data within an evidence map in Figure 2.

Results

Participants

Seven studies met the inclusion criteria. One was a case studies including a 27-year-old man with a moderate ID, physical disability and visual impairments, diagnosed separation anxiety and 12 caregivers (S4: Jonker, Sterkenburg, & Van Rensburg, 2015). Two studies targeted professional caregivers reporting their observations for attachment and CB about samples respectively composed of 43 and 57 adults with ID (S2: Clegg & Sheard, 2002: S6: Penketh, Hare, Flood, & Walker, 2014). The other studies included adults with ID (n=60) as well as their *supporting* caregivers (n=39) (S5: Larson, Alim, & Tsakanikos, 2011) or only adults with ID, either referred for behavioral and/or emotional issues (S1:Clegg & Lansdall-Welfare, 1995), visual impairments and separation anxiety (S3: Hoffman, Sterkenburg, & Van Rensburg, 2019) or who were detained for committing violent or sexual offense (S7: Rayner, Wood, & Beail, 2015). Three studies included participants with severe ID (S1, S2, S3) and the other studies included participants diagnosed with-or whose profile seem closer to mild to moderate ID (S4, S5, S6, S7). All studies focused on caregivers or therapist's report, one study used respondent report as main source of information (S5) and another one used a smaller sample of respondent reports as secondary outcome (S6).

Is there empirical data supporting association between attachment and CB in adults with ID?

Overall findings suggest that attachment problems are linked to CB with varying focus on the type of CB. S2 elicited rather unspecific association between relationship overinvestment (considered as a sign of attachment issues) and disruptive behaviors. The same unspecific association was reported in S6 with lower levels of ID and lower levels of CB being significantly associated with higher attachment score. In S5, 64% of caregivers reported CB for the participants, with many indicating multiple types in the same participant and the most commonly reported CB (28%) being "overly fond of support staff" (e.g. following them around, crying when they leave, etc.) with surprisingly no significant association between this type of behavior and attachment style. The findings were mostly correlational (S2, S5, S6).

However, S3 and S4 elicited intervention-based associations between attachment and CB (see the next section for details about intervention). Both studies included the *anxious/depressed, attention-seeking* and *aggressive behavior* subscales of the ABCL. S4 showed that compared to automated computer answer, the caregiver answer phase led to significant decrease of anxious and angry messages, but not for happy, sad or "help" messages. Aggressive and attention-seeking subscales of the ABCL also significantly decreased over the course of the intervention, as did the number of anxious and CB that was monitored daily by the caregivers. S3 largely replicated S4 results with significant decrease in the number of anxious messages, ABCL total scale as well as aggressive and intrusive/attention-seeking subscales.

S1 and S7 reported associations that weren't based on any statistical elements and that are therefore qualify as *observational.* S7 described potential associations between inability to cope with environments, feelings, and CB such as aggressive behaviors and breaking rules

(e.g. running away). Reciprocally, these behaviors tend to lead to ruptures in relations for participants (e.g. being expulsed from school, neglected by families, rejected from peers, etc.). In the same study, relations were hypothesized between overinvestment in relations and extreme and repeated sense of loss through the life course of participants with social isolation behaviors. In S1, each of the three clinical case elicited the presence of both problematic attachment behaviors (e.g. overinvesting a relation with a staff member, getting jealous, having difficulties to cope with separation from the attachment figure) and other types of problematic behaviors such as aggressive behaviors, binge eating, shouting, etc.

What are the methodological options undertaken regarding assessment?

Attachment was assessed in a variety of ways. One study focused on *attachment behaviors* reported by caregivers (S2) through a specific question about over-investment in relationships: *"Does the person over-invest in one or a few relationships, which become a source of jealousy?"* The other studies (S3, S4, S5, S6) focused on *attachment styles.* S3 and S4 mostly focused on the *anxious dimension* of trust and worry in relationships. S3 included participants with diagnosed separation anxiety. S4 used standardized but indirect measures of attachment such as the anxiety scales of the PIMRA in its informant version (Psychopathology Inventory for Mentally Retarded Adults) (Linaker & Nitter, 1990) and the Brief Symptom Inventory (BSI) (Wieland et al., 2012) (filled by an independent researcher). In this study, the participant also had the opportunity to send text messages to the staff and the emotional content of the text sent through the intervention phase of the study completed the attachment assessment. S5 focused on a typology of attachment styles (*secure, insecure-avoidant, insecure-ambivalent*) whilst S6 provided a total score reflecting the assessment of the adaptative function of an individual's attachment score, with yet no cut-off score defined for *secure attachment.* S5 chose to adapt and simplify the *Attachment Style Statements* (Hazan

& Shaver, 1987) for which participants had to select from three statements (one for each attachment style: *secure, avoidant,* and *anxious/avoidant*) those that described their feelings the best; this questionnaire has to be rated by the person and by his/her caregiver. S6 was the only study involving straightforward standardized instrument (MAST for Manchester Attachment Scale-Third Party) for assessing attachment. In this study, a second standardized instrument, the SRAAS for Self-Report Assessment of Attachment Security (Smith & McCarthy, 1996) was also used in order to assess for the MAST concurrent validity. In two studies (S1, S7), attachment was not directly assessed but rather considered through reporting and clinical interviews. S1 used a semi-structured interview that directly addressed the themes of attachment representations as the questions are described as targeting aspects of social lives (also regarding attachment experience with peers, friends and partners), family and attachments as a child and an adult. S7 rather focused on attachment behavior in their potentially problematic aspects such as seeking proximity or attention, overinvesting a relation with a staff member, being unable to cope with separation, and so on.

CB were also assessed in a variety of ways. Standardized tools were used in three studies (S3, S4, S5). These tools were Adult Behaviour Checklist (Tenneij & Koot, 2007) (S3, S4) and the Learning Disability Casemix Scale (LDCS) (Pendaries, 1997) (S6). Unstandardized assessments varied from selecting from a list of commonly occurring examples of CB (S5), to daily computerized monitoring with email alerts to remind caregivers to complete a set of questions (S4). S2 used a previously published survey (Sheard et al., 2001) about behaviors over the last 3 months. In two studies (S1, S7), behavior was not directly assessed but rather considered through reporting and clinical interviews. S7 elicited behavioral elements within their thematic analysis of verbatims whilst S1 reported behavioral issues through clinical case description.

Are there any empirically assessed attachment-based interventions dedicated to managing behavioral issues in adults with ID? And what are their outcomes?

Two studies (S3, S4) explicitly focused on the management of CB through technology-assisted therapy for separation anxiety. Therefore, it can be considered that in both cases, attachment is the focus of the intervention and CB are the outcomes. S3 aimed to extent S4 design through a case series design and both studies use the same intervention design. It involved an application uploaded on a mobile phone that allows the participant to send messages about their emotions (sad, angry, happy or anxious), with an option to request help from the caregiver. Messages exchanged with caregivers were lately discussed during meetings. Caregivers were trained to react in ways that stimulate secure attachment relationship. Those studies involved gradual phases within the intervention design going from automatic computerized answers to the participant's messages, to personalized and attachment-based answers provided by the caregivers (along with physical meetings).

Additional measures

S3 included additional measures of psychosocial functioning with the Brief Symptom Inventory (BSI) (Wieland et al., 2012) and a measure of quality of life with the IDQOL (Hoekman et al., 2001). In this study, following the attachment-based intervention, psychological functioning (BSI total score) and quality of life (IDQOL total scale) increased significantly.

Finally, among other studies including additional measures for psychological functioning, mental health, and behavior, S5 showed a trend to more mental health problems in participants with insecure attachment (significant correlations were found whenever caregivers report on mental health issues were considered within the analyses), with a significant association between insecure attachment and depression, but not with anxiety.

Discussion

The present systematic review aimed to examine if direct associations between CB and attachment have been empirically assessed in adults with ID, to analyze how both constructs have been operationalized and to identify gaps in research as well as directions for future studies and clinical interventions.

The main finding was that attachment problems can be positively linked to CB. More specifically, attachment problems were, in overall, significantly related to a higher prevalence of challenging behaviors either globally (*i.e.* studies considered a "total score" for CB measures) or with more specific dimensions such as *attention-seeking* and *aggressive* behaviors. Those associations being, however, considered relative regarding the level of evidence provided by the number of studies as well as their designs. Furthermore, it seems that attachment problems can be linked to psychological difficulties such as depressive affects and maladaptive coping.

As mentioned, it should be noted that the number of studies included was very limited and these studies were mainly correlational (Clegg & Sheard, 2002, Larson et al., 2011; Penketh et al., 2014) or observational/clinical (Clegg & Lansdall-Welfare, 1995; Rayner et al., 2015). Indeed, we found only two experimental case studies implementing a technology to decrease anxious and CB that are based on the same research involving people with mild ID and visual impairment (Hoffman et al., 2019; Jonker et al., 2015). Furthermore, included studies involved varying approaches to assessment and reporting of both attachment and CB. Most of the included studies considered attachment styles in adults with ID whilst one of them focused on attachment behavior. Overall, CB were poorly characterized in terms of nature and/or intensity. Standardized instruments were lacking in several studies for attachment and/or CB measurement. The included studies also had noteworthy heterogeneity in terms of participant

characteristics and lacked statistical power, which make it difficult to reach a definite conclusion. In close relation to the conclusions drawn by related reviews (Mullen, 2018; Schuengel, et al., 2013), the present scoping review thus highlights the need for empirical research (correlational, longitudinal, and experimental) using validated instruments for both attachment and CB.

Indeed, the small number of studies investigating relationships between attachment and CB seems striking when compared with the conclusions drawn by Clegg and Lansdall-Welfare about the importance of further investigations about their attachment-based analyses of behavioral issues in adults with ID (1995). This could have several explanations. First, researchers may face measurement issues related to attachment pattern assessment in adults with ID. However, despite the methodological challenges that have to be faced though the elaboration of such psychometrically sound measures (e.g., difficulty in accurately recalling childhood experiences, limitations in identifying and describing one's own thoughts, etc.), there are now several instruments for the assessment of attachment in people with ID (see Walker et al., 2016 for review) that are validated and available. It should be noted that the attention paid to measurement should extend to the assessment of CB. Most studies included in the present review used different tools (which are not always validated) and referred to total scores of CB, giving very little information about the nature of these CB (i.e., self-injurious behavior, aggressive behavior, inappropriate sexualized behavior, and so on). Yet, based on socioecological models of CB such as that proposed by Bowring and colleagues (2019), it could be hypothesized that CB involving interpersonal dimensions in content (e.g., hetero-aggressive behavior, constant need for reinsurance, etc.) or in function (e.g., CB that are analyzed as having the objective to gather attention or emotional holding) may be more likely to be linked with insecure attachment patterns. Second, as grounding theories on attachment have focused on its development through childhood, most research on attachment

in ID are led among children. For example, it has been demonstrated that lack of attachment relationships during childhood is a risk factor to develop maladaptive ways of regulating stress in everyday life that can lead, in turn, to CB (Giltaij, Sterkenburg & Schuengel, 2015). However, as underlined by Clegg and Lansdall-Welfare (1995), attachment framework is particularly relevant for adults with developmental disabilities because supportive relationships remains critical to them through adulthood as most of them do not become fully independent and their reliance on a small number of individuals, most likely family or caregivers. A third and final factor may be the prevalence of (cognitive) behavioral paradigms within the field of research and clinical practice on CB in ID. These paradigms have provided significant insight into CB understanding and management and have been capable of achieving the objective of symptom reduction and broadening its scope to improve quality of life. However, as highlighted by Skelly (2016), behavior disturbance and relationship worsening should not be considered separately. He suggests that on the sidelines of a "classic" functional analysis, several behavioral attachment principles should be considered to analyze CB, such as trying to identify how the behavior may indicate insecurity and emotional needs, which emotions are communicated by the behavior, the person's level of emotional development, relevant elements, or significant events in the person's history to understand the behavior, and so on. These assessment principles go along with "joint" behavioral and attachment-based intervention. Such attachment-based principles may involve resisting rejection, practicing emotional holding, ongoing commitment, or focusing on a *realistic dependency level* regarding past experiences and emotional maturity of the person. Therefore, behavioral and attachment paradigms may participate in the joint and broader understanding of CB

As mentioned, CB are highly prevalent in adults with ID and are associated with higher risk for negative reactions of caregivers, physical arm, disruptions in life trajectories

and rejection. Caregivers also suffer from CB as it has been linked with higher psychological distress in family members (i.e. Unwin & Deb, 2011) and staff (Bowring et al., 2019; Hastings et al., 2013). Importantly, van den Bogaard and colleagues (2019) found out that staff's attributions on CB of people with ID tend to be mostly considered as *stable* (do not change much over time), *global* (the people with ID is identified as the agent of CB) and linked to *internal factors* (linked with the people with ID emotion or psychological state, not related to an agent behavior or an environmental factor) which imply that staff would feel powerless and do not believe they are able to prevent such issues. Thus, it seems essential to help staff understanding and reacting to CB. It is likely that the framework of attachment could help putting the emphasis on the interpersonal management of CB for caregivers through the dyadic nature of caregiving. Schuengel and colleagues (2010) already stressed the necessity for caregivers to be highly sensitive and interested in the *client* as an individual to be able to perceive subtle cues and interpret these cues correctly. All the more so if they are living in group home care, wherein access to attachment network (family, friends, mentor…) is often limited and emotional security is highly dependent on direct-care staff. Although they recognize that group home care also a *risky environment* due to staff turnover, workload, and discontinuity of staff presence, which make quality and stability of relationships patterns with caregivers even more important to consider. Thus, despite a dearth of empirical research, the topic of attachment patterns, emotional security, and coping strategies on preventing and managing CB is therefore a matter of great importance for clinical practice, adequate service provision, and individual's quality of life.

Future studies should continue to consider attachment and CB as separate constructs because CB is often confused with problematic attachment behaviors. Such dissociation seems inevitable to understand and specify the dynamic relations between these constructs. More specifically, current perspectives on adult attachment does not allow to clearly state on

the nature and/or intensity of behaviors that could be a direct consequence of insecure attachment patterns. Furthermore, preliminary results showing decrease of anxiety and better psychological functioning through attachment-based interventions also raise the question of the type of relation between attachment issues and CB: does attachment patterns of adults with ID are to be considered as mediating variable for CB or a moderating variable between CB and other psychological dimensions?

Although methodological standards for conducting scoping review have been applied, this paper is not without limitations. Indeed, we chose to limit our review to CB and to not include studies discussing behaviors as a broader scope. However, this choice was made in order to insure a specific scoping review examining the links between attachment and CB in adults with ID as it is of crucial interest for clinical practices and thus, future research.

To conclude, this scoping review provides preliminary insight on the relation between attachment and CB in adults with ID. However, more studies on this topic are needed to clearly state the nature and implications of these relations, more specifically, if they are more likely to be applied to a certain type of CB. It is recommended to employ available psychometrically sound measures for attachment as well as CB assessment, making them comparable across studies and building groundwork for generalization of data. Further research should also assess the feasibility and clinical effectiveness of attachment-based interventions for the management of CB in this population, as very few existing initiatives and programs have not been experimentally assessed to date.

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