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Integrative Care for Adolescents With Dual Diagnosis: Considering Trauma and Attachment Within an Innovative Model for Clinical Practice

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ABSTRACT

Adolescents with intellectual disability are at significant risk for developing concomitant mental health and behavior problems. Youth who experience “dual diagnosis” face great challenges, and require interventions that will promote their autonomy, self-determination, and adaptive functioning. In this article, we devote attention to innovative components that have received less focus, but that we suggest have great relevance for this population, namely those related to attachment and trauma. We review research examining attachment- and trauma-informed care, and highlight practical approaches for which evidence is emerging. We suggest that a comprehensive treatment model must integrate well-validated and innovative treatment approaches, in order to address the complex clinical concerns of this population.

KEYWORDS

Attachment; intellectual disability; mental health; trauma

Youth who experience intellectual or developmental disabilities and mental health symptoms (i.e., dual diagnosis) and their caregivers experience significant challenges, and require approaches that are evidence based and tailored to their needs. Yet, evidence-based programs that successfully meet the uniquely challenging needs of this heterogeneous population are difficult to access. This article aims to establish an innovative framework to guide the development of programs for the assessment and treatment of dually diagnosed youth. We suggest that attention be directed toward approaches that are informed by attachment and trauma principles, and that an effective treatment model will be one that reflects the successful integration of well-validated components with these emerging areas of clinical practice.

Differentiating Dual-Diagnosis Clinical Populations

Although used interchangeably, the terms *intellectual disability* (ID) and *developmental disability* (DD) are distinct. Individuals with ID demonstrate

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intellectual impairment (i.e., IQ at or below 70) as well as significant limitations (i.e., at least two standard deviations below the mean) in at least one domain of adaptive functioning (e.g., conceptual, social, or practical). DD reflects a broader classification of neurodevelopmental conditions that emerge during the developmental period (American Psychiatric Association [APA], 2013; Morris, Janssens, Tomlinson, Williams, & Logan, 2013). Individuals within this category do not necessarily demonstrate intellectual impairment (American Association on Intellectual and Developmental Disabilities [AAIDD], 2013). This article focuses on adolescents with ID. It is estimated that approximately 18.30 of every 1,000 children and adolescents have ID (Maulik, Mascarenhas, Mathers, Dua, & Saxena, 2011). ID arises from diverse etiologies that may have environmental (e.g., pre-, peri-, or postnatal insult, such as toxin exposure, malnutrition, or abuse), biological (e.g., chromosomal anomalies, structural brain abnormalities, or inherited predispositions), or idiopathic (i.e., of unknown causation) origins (AAIDD, 2010; Harris, 2006; Szymanski & King, 1999).

Individuals with ID are at greater risk for developing mental disorders than are same-aged typically developing individuals. Although all mental disorders identified in the *DSM-5* (APA, 2013) and *ICD-10* (World Health Organization [WHO], 2007) are observed in this population (Bernard & Turk, 2009; Szymanski & King, 1999), autism spectrum disorder (ASD), self-injurious behavior, attention deficit/hyperactivity disorder (ADHD), anxiety, depression, and psychosis are overrepresented (Matson & Shoemaker, 2011). This circumstance is termed “dual diagnosis” and though prevalence estimates vary depending on sampling technique (e.g., community versus clinical) and inclusion criteria, reviews suggest that between 30–50% of children and adolescents with ID have a co-occurring mental health disorder (Einfeld, Ellis, & Emerson, 2011; Emerson & Hatton, 2007). Dual diagnosis negatively impacts both individual and family quality of life, as mental health problems significantly limit adaptive functioning, autonomy, and success in community-based day and residential programs (Einfeld et al., 2006; National Association for the Dually Diagnosed [NADD], 2013). Families also undergo great strain, as they experience a higher burden of care than families of individuals with only one condition (i.e., ID or mental illness), and they struggle to meet their children’s needs without adequate support (Esbensen, 2011; Martorell, Gutiérrez-Recacha, Irazábal, Marsa, & García, 2011).

The reasons behind this increased vulnerability are unclear, though likely relate to the interaction of a diverse array of organic, behavioral, developmental, and sociocultural risk factors, the specific nature of which may vary depending on degree of intellectual impairment (Matson & Sevin, 1994; Matson & Shoemaker, 2011). For example, environmental factors such as social stigma may play a more influential role for those with mild ID who may internalize such hurtful experiences, whereas organic (e.g., genetic) and

behavioral (e.g., reinforced environmental contingencies) factors may have greater significance for those with more profound intellectual impairment.

Considering the Significance of Trauma and Attachment

Risk factors related to social deprivation and trauma are also significant as they often interact with genetic factors to increase risk (Heim & Nemeroff, 2001). Children with ID are more likely to live in socially disadvantaged circumstances (e.g., characterized by poverty, poor family functioning, and poor parental mental health), which are associated with greater developmental psychopathology and behavior problems (Emerson & Hatton, 2007; Wigham, Hatton, & Taylor, 2011). Youth with ID are also more likely to experience adverse life events, including parental separation, parental problems with police, death of a close friend, and child maltreatment, all of which are related to heightened rates of meeting criteria for dual diagnosis (Hatton & Emerson, 2004; Wigham et al., 2011). With regard to maltreatment, research suggests that children and adolescents with ID are four times more likely than children without to experience neglect and abuse, and one in three is sexually abused as a child or adolescent (Palucka & Lunskey, 2012; Sullivan & Knutson, 2000). Children with disabilities are also more likely to be repeatedly victimized and to experience multiple forms of violence (Sullivan & Knutson, 2000). Prevalence estimates of maltreatment in young people with disabilities have ranged from 5–68%, although most estimates suggest that about 30% experience abuse or neglect, as compared to 9% of the typical population (Jones et al., 2012; Sullivan & Knutson, 2000). Importantly, children with ID are also more likely to be placed in foster care, to experience multiple out-of-home placements, and to have lengthier out-of-home stays, and are less likely to return to parental care, as compared to children without developmental-medical conditions (McConkey, Kelly, & Craig, 2014; Rosenberg & Robinson, 2004). In Lightfoot, Hill, and LaLiberte (2011) research comparing children with and without disabilities with substantiated histories of maltreatment, those with a disability were approximately two times more likely to be placed in foster care. Research demonstrates the strong association between such adverse life events and the emergence of mental illness and behavior problems among individuals with ID, with particularly strong evidence linking child maltreatment to attachment disruption (Janssen, Schuengel, & Stolk, 2002; Wigham et al., 2011; Wigham, Taylor, & Hatton, 2014).

Despite these high rates of early adversity, exposure to trauma and trauma-associated symptoms often go unrecognized by clinicians, and are rarely addressed within treatment (Turk, Robbins, & Woodhead, 2005). This may be related to the incorrect belief that individuals with ID do not understand traumatic events and are therefore protected from their adverse effects,

as well as to a lack of understanding that such individuals may interpret seemingly routine events (e.g., a move or change in caregiver) as distressing and threatening (Bradley, Sinclair, & Greenbaum, 2012). Moreover, the co-occurrence of significant medical issues (Kerr et al., 2003; Van Schroyen Lantman-De Valk, 2005) and communication problems (Putnam, 2009; Royal College of Psychiatrists, 2003) may obstruct the identification of trauma-related symptoms. Under-recognition may also be associated with diagnostic overshadowing, which refers to clinician bias of attributing behavior to the individual's ID, as opposed to considering co-occurring mental health disorders (Reiss, Levitan, & Szyszko, 1982). At this point, clinical training is also unlikely to emphasize the importance of trauma in this population, as attention to such issues are newly emerging within research and clinical practice. Unless practitioners are made aware of complex trauma histories common to youth with ID, as well as the need for appropriate assessment, the effects of such early adversity may not be adequately addressed within treatment planning (British Columbia Ministry of Health, 2007; Matson, Cooper, Malone, & Moskow, 2008; National Child Traumatic Stress Network [NCTSN], 2004).

The potentially disrupted attachment histories of individuals with ID also warrant consideration, as this represents a pervasive issue that threatens resilience. Specifically, there is a higher proportion of individuals with ID who have disorganized attachments, as compared to those who are typically developing (Janssen et al., 2002). Janssen et al. (2002) identify factors that are unique to this circumstance that may help to account for this increased vulnerability: parental stress, known to be high among mothers and fathers of children with DD (e.g., Baker, Blacher, Crnic, & Edelbrock, 2002), may make it difficult for caregivers to provide the sensitive and responsive environments required for secure attachment to develop; parenting approaches may be ill-matched to the complex needs of this population, as caregivers may have inadequate social support and few models of caregiving in this context; individuals' cognitive impairments may mean that attachment behaviors, including proximity seeking and signaling, are displayed differently than in typical children, and caregivers may be unsure of how to interpret cues (Fidler, 2012). Finally, institutionalization represents a fundamental breakdown of the caregiving relationship and is in itself an acute attachment trauma, particularly among individuals whose cognitive functioning complicates their understanding of the situation. Moreover, institutionalization typically follows a series of serious and acute problems in the caregiving relationship, which disrupts attachment security. Placement outside the home, especially when marked by instability and placement breakdowns, may increase attachment disorganization. Collectively, experiences related to trauma and insecure attachment not only increase the likelihood that individuals with ID will develop mental health and behavior problems (Wigham et al., 2011, 2014), but also set in motion cascading developmental processes that render individuals less receptive to

developmental opportunities and to forming future secure attachments (Emerson, 2013). Without intervention, vulnerability continues by virtue of this self-perpetuating cycle of risk. As such, attachment and trauma are closely intertwined concepts, as individuals who have experienced trauma will benefit from secure relationships characterized by feelings of safety, security, predictability, and continuity that help to promote self-regulation and coping (Keesler, 2014).

Proposing an Innovative Approach to Care

Evidence-based care for individuals with dual diagnosis represents an emerging area of clinical practice. This population is characterized by significant heterogeneity in terms of their profiles of cognitive and communicative abilities, concomitant psychopathology, and histories of maladaptation and resilience; however, best-practice models exist for implementing clinical care that are sensitive to the unique needs of these youth. It is beyond the scope of the current article to conduct a thorough review of such components, as they have been the subjects of significant attention. See [Table 1](#) for an overview of exemplar components related to best-practice assessment and treatment. Instead, we devote attention to innovative components that have received less focus, but that we suggest have great relevance for this population, namely those related to attachment and trauma. We suggest that a comprehensive treatment model must integrate well-validated *and* innovative treatment approaches in order to address the complex clinical concerns of this population (see [Figure 1](#)).

In considering the high prevalence of disrupted attachments and exposure to adversity present in this population, these emerging areas require focused attention within the context of professional caregiving. Perhaps most importantly, it is critical that models of service are guided by principles of attachment and trauma, as they help to support the long-term continuity and sustainability of relationships and care. The attachment relationship between caregivers and youth plays an important role in the development of all individuals, and this is also true amongst those with dual diagnosis. Caregiver sensitivity is particularly important in understanding the meaning of communication, both verbal and nonverbal, in this population (Schuengel, Kef, Damen, & Worm, 2010). When experiencing stress, these adolescents may express the need for safe haven through unique and perplexing behaviors that can often be misinterpreted by caregivers who are not well versed in the development and expression of attachment needs in atypical populations (Haskell, 2012). It is important for professional caregivers to be guided by attachment principles when forming client-professional relationships, and to be understanding of how further disruptions threaten clients' already disorganized internal working models (De Schipper & Schuengel, 2010; Schuengel et al., 2010).

Table 1. Best practice principles as applied in clinical care.

| Component | Application in care |
|--|---|
| <i>Biosychosocial assessment</i> | |
| | Multi-informant (if possible) and multimodal (see American Academy of Child and Adolescent Psychiatry, 1999). May rely on standardized tools. See Matson, Belva, Hattier, and Matson (2012) and Rush, Bowman, Eidman, Toole, and Mortenson (2004) for a review of psychometrically sound measures of general psychopathology appropriate for this population. See Matson, Dixon, and Matson (2005) for a review of tools pertinent to the assessment of aggression. |
| <i>Guiding principles</i> | |
| | Effective treatment is individualized, strengths-based, multidisciplinary, flexible to accommodate the unique needs of the individual, and should be community based. The family system is involved to the greatest extent possible (partnerships may be with biological, foster, or adoptive families) (Dishion & Stormshak, 2007). Culturally sensitive. |
| <i>Evidence-based treatment</i> | |
| <i>Person-centered planning</i> | |
| | Most widely cited model for implementing individualized care (Department of Health, 2007). Collaborative and community-based. Emphasizes and respects an individual's right to make choices and to be an active partner within service provision. Associated with positive outcomes, including improved social networks, community participation, autonomy, self-esteem, and happiness, as well as reduced behavior problems and isolation (Holburn, Jacobson, Schwartz, Flory, & Vietze, 2004; Ratti et al., 2016; Robertson et al., 2007; Wigham et al., 2008). |
| <i>Positive behavior support (PBS)</i> | |
| | Guided by person-centered values and Wolfensberger's (2011) notion of social role valorization (i.e., that individuals with ID have a valued social role to play within society). Incorporates principles of applied behavior analysis (ABA), which have the strongest evidence base, and focuses on self-determination (Matson & Shoemaker, 2011; Rush & Frances, 2000). The primary focus is preventative, with alteration of environmental consequences and antecedent conditions (Jones, 2013). Interventions are built upon Functional Behavioral Assessment (FBA). Longitudinal data indicate that PBS is associated with positive outcomes, including fewer behavior problems, improved adaptive functioning and quality of life, decreased use of reactive strategies (e.g., environmental restriction, restraint, and seclusion), and reduced injuries to self, staff, and other service users (Allen et al., 2011). |

As related to trauma, it is critical that clinicians are attuned to the diverse ways that trauma can disrupt social, emotional, and cognitive development (Keesler, 2014; NCTSN, 2004). Trauma may be expressed through a variety of severe behavior problems, including aggression, violence, and self-harm. Environmental cues may trigger previous traumatic experiences, exacerbating behavioral and other symptoms. By understanding trauma histories, professionals can shape clinical care to best support youth with dual diagnosis by understanding the meaning of their behavioral problems and minimizing environmental cues and complexities that may lead to stress.

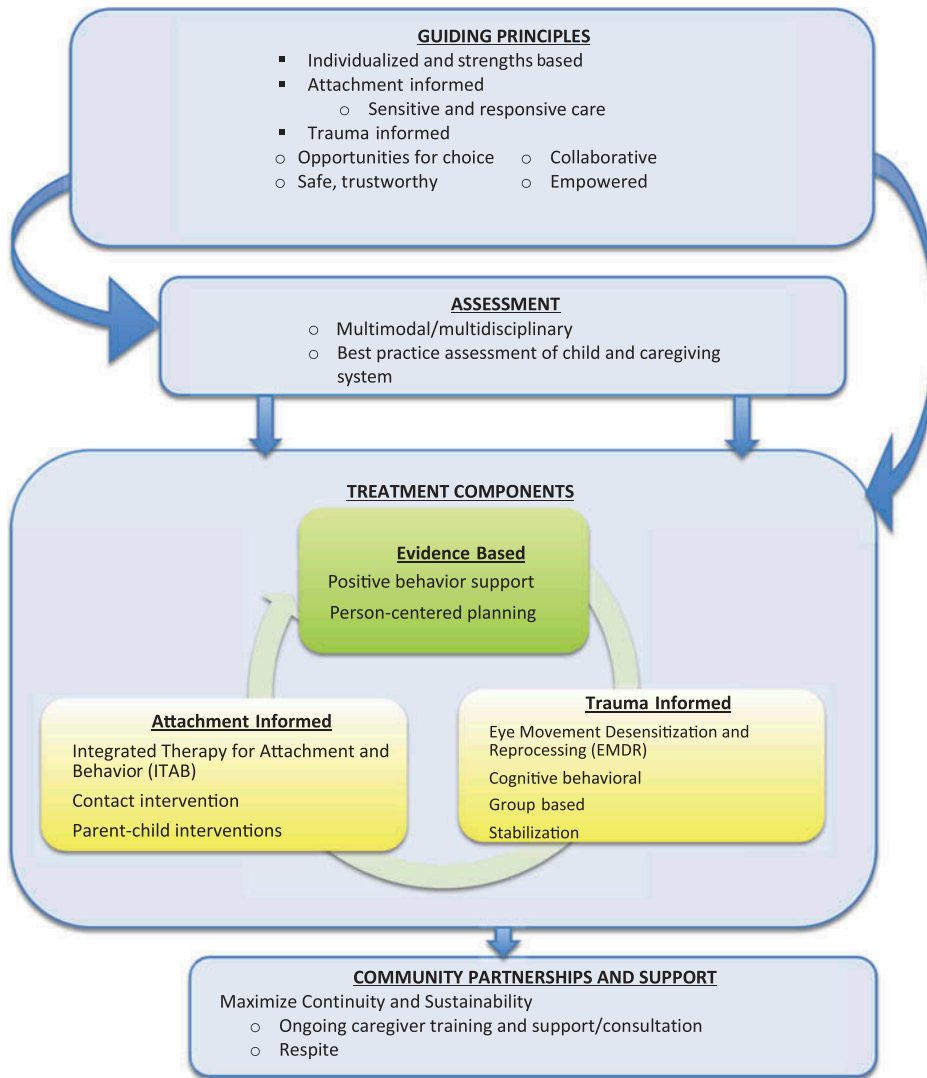


Figure 1. Innovative treatment and incorporating evidence-based and emerging approaches.

Trauma-informed care is a philosophy of practice aimed at promoting the autonomy and well-being of individuals with dual diagnosis. Within this paradigm, it is assumed that all individuals may have experienced trauma, and assessment and treatment are therefore guided by sensitivity to the ways in which trauma influences behavior and mental health (Canadian Centre on Substance Abuse, 2012; Fallot & Harris, 2009; Ontario Centre of Excellence for Child and Youth Mental Health, 2012). The first principle, Trauma Awareness, refers to professionals' knowledge that individuals (with dual diagnosis) may have developmental histories punctuated by traumatic experiences, both acute and chronic, and that these experiences influence their capacity to self-regulate, as well as the nature of the attachment relationships

they form. The second principle, Emphasis on Safety and Trustworthiness, acknowledges that dual-diagnosis youth have likely experienced relationships in which they felt threatened and insecure. Their adaptive functioning is supported through the provision of relationships that are safe and secure, both physically and emotionally (Schuengel, De Schipper, Sterkenburg, & Kef, 2013). This principle also encompasses the need for involving the individual with ID in the informed consent process (see Rush & Frances, 2000 for expert consensus guidelines regarding best-practice informed consent procedures). Many of the elements associated with the remaining principles, Opportunity for Choice, Collaboration, and Connection, and Strengths-Based and Skill Building, mirror those practices already discussed, and include open communication, equal power distribution, and providing individuals with ample opportunities for autonomy building. It has also been suggested that caregivers be included in both assessment and treatment, as they can help individuals to overcome communication challenges and provide insight into trauma-related behaviors (NCTSN, 2004). Effective use of the described principles minimizes the risk of re-traumatization and fosters self-efficacy. Individuals are thus better prepared to confidently and competently make decisions, effectively regulate their affect, and successfully interact with relationship partners across contexts.

Examining Emerging Evidence

Although we suggest that principles central to understanding attachment and trauma should guide care for those with dual diagnosis, this represents, at best, an emerging area of clinical practice, as established guidelines and models are not available (Ontario Centre of Excellence for Child and Youth Mental Health, 2012). In order to provide an overview of existing practical models and approaches, we conducted a review of the literature.

We conducted a search of the Cumulative Index to Nursing and Allied Health Literature (CINAHL), MEDLINE, and PsycINFO databases, using all combinations of the following search terms: [attachment *or* trauma] *and* [intellectual disability *or* developmental disability] *and* [challenging behavior *or* problem behavior *or* mental health *or* psychopathology]. Further articles were identified from the reference lists of reviewed papers. Articles were reviewed if they were peer-reviewed, pertained to children or adolescents with DD and concurrent mental health or behavior problems, and made explicit mention of incorporating principles related to attachment and/or trauma within practice. We reviewed original research as well as conceptual papers. We excluded research focusing on very young children (aged birth to six years), as well as those that focused only on assessment methodologies or descriptions of attachment- or trauma-related behavioral sequelae.

Attachment-Informed Care

The majority of research investigating attachment-informed approaches to clinical practice in this population has emerged from the Netherlands, and has examined a specific attachment-based behavior modification intervention, Integrated Therapy for Attachment and Behavior (ITAB; Sterkenburg, Janssen, & Schuengel, 2008). ITAB has been used successfully with visually impaired adolescents with severe ID and challenging behavior who did not respond to medical intervention or traditional behavioral therapy. ITAB consists of three phases. In the first, an attachment therapist forms a secure therapeutic relationship with the adolescent by consistently responding sensitively and positively. This helps the adolescent to experience the reinforcing nature of sensitive and responsive social contact. In the second phase, a traditional behavior modification approach is implemented with the goal of replacing target problem behaviors with socially appropriate alternatives. Finally, the interventionist works with the adolescent's regular daily caregivers, so the attachment relationship and newly developed adaptive behaviors are generalized and maintained.

This approach is associated with positive outcomes, as adolescents who received the intervention demonstrated less frequent and intense problem behavior, as well as greater adaptive behavior, as compared to a control group who received only positive attention and behavior modification (Sterkenburg et al., 2008a, 2008b). Clients receiving ITAB also demonstrated more attachment behavior, including active proximity seeking, and lower psychophysiological arousal, during Phase 2, suggesting improved affect regulation (Schuengel, Sterkenburg, Jeczynski, Janssen, & Jongbloed, 2009). This intervention provides a valuable illustration of how evidence-based treatments (e.g., behavior modification) can effectively complement emerging principles (e.g., attachment-informed care) within clinical practice. The generalizability of the approach, however, is limited by the reliance upon a highly trained therapist, as well as its time-intensive structure (lasting an average of 10–12 months). Moreover, although this research was explicitly guided by an attachment framework, no systematic examination of this element was conducted. It would be helpful if future research could evaluate the independent impacts of the attachment component, as this would clarify the additive benefit of behavioral therapy when led by therapists with whom a secure attachment has formed.

Others note that given the likelihood of individuals with dual diagnosis to have disrupted attachment histories, attention must be given to fostering secure attachments with professional caregivers (Clegg & Lansdall-Welfare, 1995). Although not explicitly tested with those with dual diagnosis, the Contact intervention (Schuengel, Kef, Damen, & Worm, 2012) has been suggested as an appropriate option for this population

(Schuengel et al., 2013, 2010). Originally developed for caregivers of children with visual and hearing impairments, this program has been utilized with adolescents and adults with severe intellectual and visual disabilities (Damen, Kef, Worm, Janssen, & Schuengel, 2011; Schuengel et al., 2012). In this program, professional caregivers and clients participate in a preliminary group session in which they focus on communication and interactive behavior (e.g., turn taking, confirmation). This is followed by four video-feedback sessions with an interaction coach, during which they review their recorded interactions with clients. Caregivers are encouraged to reflect on their interactions and to identify ways of becoming more attuned, sensitive, and responsive to their clients. In a final group session, caregivers consider how these new strategies can be incorporated into clients' care plans (Damen et al., 2011). Following the onset of intervention, caregivers demonstrated more frequent confirmation of client signals, improved responsiveness to client initiatives, and showed higher affective mutuality (verbal and nonverbal open emotional engagement), indicating that caregivers were better prepared to foster high-quality attachment relationships with their clients (Schuengel et al., 2012). Damen et al. (2011), however, reported no significant change in client responsiveness. Future research should seek to identify why improved caregiver sensitivity and responsiveness was not reciprocated by clients, and empirically evaluate how such positive changes in caregiver behavior can similarly translate to meaningful improvements for individuals with ID.

Finally, Mohamed and Mkabile (2015) describe an attachment-based parent-child intervention aimed at reducing severe biting behavior in an adolescent with ID. The intervention began with three individual sessions with the mother, during which she reflected on how her own attachment history influenced her interactions with her daughter. This was followed by eight structured play sessions, in which the mother and child completed preplanned activities (e.g., balloon tennis, lotioning, bubbles). Play sessions were based on Theraplay principles, which is a highly structured play-based therapy aimed at improving child-family attachment (Jernberg, 1984). After intervention, mother-daughter interactions were lengthier and characterized by greater engagement. Specifically, the pair showed closer physical proximity, greater direct contact, and increased gentleness and sensitivity. Although not formally assessed, the mother also indicated that there was a reduction in biting behavior. This represents a promising approach for improving parent-child relationships; however, further systematic research is needed to determine its efficacy within a broader population.

Trauma-Informed Care

When reviewing articles pertaining to trauma-informed care, it was apparent that most investigated treatment of individuals with ID and post-traumatic stress disorder (PTSD). As such, we conducted a second literature search, including “PTSD” as one of the keywords. We also elected to expand our parameters, such that articles pertaining to adults with ID were included, as only two papers included adolescents (Rodenburg, Benjamin, Meijer, & Jongeneel, 2009; Stenfert Kroese & Thomas, 2006). The majority of papers aimed at treating trauma among individuals with ID have investigated eye movement desensitization and reprocessing (EMDR), cognitive behavioral, group, and stabilization approaches. As the greatest amount of evidence to date is for EMDR, we first review this work.

EMDR is a protocolized, eight-phase therapy, in which clients reprocess traumatic memories with the assistance of a therapist who administers bilateral stimulation (rapid finger movements, auditory tones, hand tapping, or tactile buzzers). The therapy is based on an information-processing theory, which suggests that traumatic memories must be adaptively processed if symptoms of distress are to resolve (Shapiro, 2001). See Table 2 for a description of each phase. The approach has been successfully adapted for individuals with ID, as outlined within a number of case studies, and modifications include using a children’s protocol (e.g., Rodenburg et al., 2009), storytelling method (e.g., Barol & Seubert, 2010), visual aids (e.g., Dilly, 2014; Mevissen, Lievegoed, & de Jongh, 2011), as well as having a trusted caregiver act as co-therapist in order to assist with communication and improve skill generalization (e.g., Mevissen, Lievegoed, Seubert, & De Jongh, 2012).

As noted, the current research base consists only of case studies that describe therapy undertaken with individuals across the range of disability

Table 2. EMDR therapy eight-phase protocol.

| Phase | Task |
|-------|---|
| 1 | <i>History and screening.</i> Client history reviewed, and treatment plan formulated. |
| 2 | <i>Preparation.</i> Client is prepared for trauma work. This may involve adapting delivery mode to align with patient’s cognitive, emotional, and verbal abilities. |
| 3 | <i>Assessment.</i> Client focuses on most distressing moment of traumatic memory, and level of arousal is assessed. |
| 4 | <i>Desensitization.</i> Client focuses on distressing memory, while therapist implements desensitization procedure. Bilateral stimulation may be visual (rapidly moves fingers back and forth across client’s field of vision), auditory (tones) or physical in nature (hand tapping, tactile buzzers). This phase ends when Subjective Units of Disturbance Scale (SUDS) has reached 0 or 1. |
| 5 | <i>Installation.</i> Client associates traumatic event with positive cognitions. |
| 6 | <i>Body scan.</i> Client identifies any remaining physiological discomfort associated with memory. This identifies targets for additional work. |
| 7 | <i>Closure.</i> Client is debriefed and given self-control strategies. |
| 8 | <i>Reevaluation.</i> Therapist ensures positive results are maintained. If necessary, old memories are reprocessed, and new targets are identified. |

severity. This research indicates that EMDR is associated with a range of positive outcomes, including significant improvement in trauma symptoms, such that individuals no longer met criteria for PTSD (Barol & Seubert, 2010; Barrowcliff & Evans, 2015; Dilly, 2014; Mevissen et al., 2011, 2012; Rodenburg et al., 2009). Others reported decreases in depressive symptoms, behavior problems, and aggression, as well as improved adaptive skills (Mevissen et al., 2011; Mevissen, Lievegoed, Seubert, & De Jongh, 2011). Such positive outcomes remained at follow-up assessments conducted at varying time points, ranging from 1–32 months (Dilly, 2014; Mevissen et al., 2011, 2011, 2012). See Jowett et al. (2016) and Gilderthorp (2015) for comprehensive reviews of the existing EMDR literature.

Although the reviewed evidence suggests that EMDR is a promising therapeutic approach for individuals with ID who have experienced psychological trauma, our conclusions must be tempered by the accompanying limitations. For example, case studies allow for little control of potentially confounding variables, and most have not assessed PTSD or ID in standardized ways (Gilderthorp, 2015). It is therefore unclear for whom the various accommodations are most appropriate, and how they can be best matched to an individual's cognitive, emotional, and communicative skill profile. Further systematic research is needed to address these questions (Jowett et al., 2016).

Cognitive behavioral approaches have also received some attention, as like EMDR, they are one of two treatments for PTSD (among typically developing individuals) recommended by the National Institute for Health and Care Excellence (NICE, 2005). Investigators have therefore posited that such an approach may be beneficial for those with ID. This category consists of a range of treatments aimed at reducing individuals' intrusive thoughts (e.g., nightmares, flashbacks) and avoidant behaviors, and have included psychoeducation, imaginal exposure, and relaxation training (Carrigan & Allez, 2016; Fernando & Medlicott, 2009; Lemmon & Mizes, 2002; Stenfert Kroese & Thomas, 2006). Table 3 outlines the various approaches that have been described in the literature, as well as accompanying outcomes.

The reviewed studies include only individuals with mild ID, suggesting that this approach may be most appropriate for those with higher cognitive and/or verbal skills. The use of cognitive behavioral techniques and strategies with individuals with ID represents an emergent and promising area of clinical practice. However, this model is unlikely to be appropriate for all clients, and we suggest that it is imperative for clinicians to consider each individual's unique capabilities in terms of communicative and cognitive functioning, as well as capacity for social-emotional insight, when determining if cognitive behavior therapy is the most appropriate approach (Hatton, 2002). What may be most critical is the way therapists modify treatment activities to promote goodness of fit between approach and individual. It has been suggested that clinicians adopt creative approaches that incorporate

Table 3. Case studies investigating cognitive behavior therapy (CBT) approaches.

| Reference | N | CBT method | Age | M/ F | Disability severity | Trauma | Results | Follow-up |
|--------------------------------|---|--|--------|---------|------------------------|--|---|-------------------------------|
| Carrigan & Allez, 2016 | 1 | Ehlers, Clark, Hackmann, McManus, & Fennell (2005) method involving psycho-education, imaginal reliving, and discussion. | 26 yrs | M | Mild | Sexual assault. | No longer met criteria for PTSD. No longer blamed self or experienced flashbacks. Improvements in intrusive thoughts and avoidance. | Maintained at 6 months. |
| Fernando & Medicott, 2009 | 1 | Education, relaxation training, problem solving, cognitive restructuring, and limited exposure. | 24 yrs | F | Mild | Physically abusive romantic relationship. | Improved sleep. Decrease in intrusive and negative thoughts, as well as in nightmares and flashbacks. | Maintained at 5 months. |
| Lemmon & Mizes, 2002 | 1 | Relaxation, imaginal and in vivo exposure. | 32 yrs | F | Mild | Sexual abuse from work supervisor, and suspected abuse by foster father. | Improvement in mood. Decreased distress during exposure, and decreased avoidance. | None. |
| Stenfert Kroese & Thomas, 2006 | 2 | Supportive counseling, practical problem solving, introduction of basic coping strategies, Imagery Rehearsal therapy. | 18 yrs | F | Mild | Sexually, physically, and emotionally abused by father. | Nightmares ceased. | Maintained at 4 and 6 months. |
| | | Imagery rehearsal therapy. | 24 yrs | F | Mild | Sexual assault by male service user. | Nightmares ceased. | Maintained at 3 and 6 months. |

verbal and nonverbal accommodations, including visual aids, drawing, rehearsal, role-play, and modelling (Haddock & Jones, 2006; Ho, Carter, & Stephenson, 2010).

Finally, three studies have examined other group-based (Peckham, Corbett, Howlett, McKee, & Pattison, 2007; Peckham, Howlett, & Corbett, 2007) and stabilization approaches (Bakken et al., 2014). As these studies included multiple participants, we have summarized participant characteristics, approaches, and outcomes in Table 4. Stabilization interventions aim to decrease trauma symptoms, and improve self-regulation and self-care skills. In Bakken et al.'s (2014) study, strategies included supportive psychotherapy, psycho-education about anxiety responses to sexual abuse, and reducing patients' anxiety triggers. This approach appears to consist of a range of strategies that fall under a broad "stabilization" umbrella, and it may be difficult to determine how the described interventions can be implemented across diverse settings. A strength of this approach, however, is that it was successfully used with individuals with more severe ID.

The Survivor's Group described by Peckham, Corbett, et al. (2007) consisted of 20 sessions, in which women who had experienced sexual abuse received sexual education (anatomy, abuse, consent), shared their stories (using visual aids), and reprocessed trauma through participating in a number of visually based activities (e.g., drawing a toolbox of coping strategies, consequences of abuse, and pie charts assigning blame). This program also involved a carer's educational support group, in which professional caregivers received education about the sequelae of sexual abuse. As outlined in Peckham, Howlett, and Corbett (2007), this program was associated with a number of positive outcomes for participants. However, this program may only be appropriate for those with mild ID, since it requires a certain level of insight and reflection on the part of the individual.

Concluding Remarks

Developing integrative care for adolescents with dual diagnosis must be more than additive in approach, and instead aim to be comprehensive, including both evidence-based and innovative components. In particular, those focusing on individual characteristics, trauma exposure, and attachment dynamics should directly inform the way treatment is carried out. Our review of the literature provides an overview of attachment- and trauma-based treatment approaches, for which evidence is emerging to support their effectiveness.

In its current state, this body of literature is inchoate, and it is important to be cognizant of existing limitations. For example, the reviewed literature consisted only of case studies with varying lengths of follow-up assessment. We therefore cannot make conclusions about the generalizability of the highlighted interventions. An important next step will be to evaluate the

Table 4. Case studies investigating other therapeutic approaches.

| Reference | N | Method | Ages | M/F | Dis. severity | Trauma | Results | Follow-up |
|---|---|---|-----------|---------------|-----------------|-------------------------|--|----------------------------|
| Bakken et al., 2014 | 5 | Stabilization interventions. | 25–40 yrs | M = 2; F = 3. | Moderate-severe | Sexual abuse, bullying. | Improved self-care, decrease in depressive symptoms, behavior problems, negative thoughts, and anxiety attacks. | None. |
| Peckham, Corbett, et al., 2007; Peckham, Howlett, and Corbett, 2007 | 7 | Survivor’s group: rapport building, education, and trauma reprocessing. | 26–47 yrs | F = 7. | Mild. | Sexual abuse. | Improved sexual knowledge, reduced problem behavior, and trauma and depressive symptoms. Increased self-disclosure and empathic concern. | Maintained at 12–15 weeks. |

reviewed treatments on a larger scale with robust comparative, controlled research designs (e.g., randomized controlled trials). This will help to identify the essential “active ingredients” of treatment, and clarify about how the various approaches can be best matched to different individual cognitive and communicative characteristics. Another limitation relates to the likelihood that the number of individuals within this population who have experienced significant trauma exposure greatly exceeds those who have a formal PTSD diagnosis (Bradley et al., 2012). As described, we elected to broaden our literature search by including “PTSD” as one of the search terms, as the initial searches including only “trauma” resulted in limited articles. However, it is still likely that this body of literature fails to adequately consider those who have experienced great adversity, but are not captured within the described programs, as there are significant challenges in applying the PTSD diagnostic criteria to those with ID (see Bradley et al., 2012). It will be important for future research to investigate community-based programs that may be better situated to treat those who do not have the PTSD diagnosis, but who nonetheless have complex and traumatic histories.

In [Figure 1](#) we have provided a visual representation of our proposed innovative approach to care. Our hope in including this model was that it may provide a framework for the integration of the reviewed principles into practice. It is accepted that treatment should be individualized and strengths-based; however, we suggest that equal emphasis be placed on attachment- and trauma-informed approaches, and that these overarching principles be integrated throughout an adolescent’s interaction with the service system, from assessment through treatment, as well within transition planning. Though we are far from having “intervention blueprints” available to guide implementation of such approaches within everyday clinical contexts, there are resources available to support implementation. Palucka and Lunskey (2012), for example, provide a practical guide to trauma-informed practice with individuals with DD. They present concrete descriptions of various sources of trauma and describe how cognitive impairment may influence reporting and presentation. The National Institute for Health and Care Excellence has also recently published quality standards addressing the prevention, assessment, and management of mental health and behavior problems among those with learning disabilities (NICE, 2017a, 2017b). These include interactive flow charts that describe implementation at each stage.

Finally, we have included community transition within our model, though this represents a tentative area of the field. It has been suggested that critical elements of transition planning include being: person-centered; individualized; contextualized within the caregiving system; strengths-based and competency-enhancing; goal-focused; community-integrated; collaborative; developmentally informed; and culturally sensitive (Clark, 2004; Ontario Ministry of Community and

Social Services/Ministry of Children and Youth Services, 2011; Walters, Zanghi, Ansell, Armstrong, & Sutter, 2010). We suggest that another essential component of any transition program is caregiver support. If positive changes are to be maintained across settings, caregivers require ongoing education, training, and access to consultation. Concrete recommendations in this area are also difficult to access, with the majority of research focusing on encouraging family involvement during active treatment. Although such programs have a place within the transition plan, innovative approaches that include provision for ongoing support through respite and tele-health initiatives, for example, will likely serve important roles.

In conclusion, youth with ID are at great risk for developing mental health and behavior problems. These problems greatly interfere with their autonomy, self-determination, and adaptive functioning. The impact is significant and far-reaching, increasing stress and reducing quality of life for them and their caregivers. Thus, early identification and assessment, as well as provision of interventions that successfully integrate evidence-based with emerging approaches, are critical to fostering effective support models for affected individuals, families, and professional caregivers. We devote particular attention to attachment- and trauma-informed approaches, as there is promising evidence supporting their use. We also suggest that the highlighted principles and practices are likely to be the most sensitive to the unique and considerable needs of this population. Although there are many challenges facing the development of evidence-based and integrative clinical care for adolescents with dual diagnosis, we hope to generate ideas for future research that may guide emerging practice and policy. It is our hope that the systematic adoption of the identified principles and practices will result in improved individual and family quality of life and resilience for a population characterized by considerable complexity and who face great adversity.

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