

Opioid Use Disorder, Attachment, and Parenting: Key Concerns for Practitioners

Rebecca G. Mirick¹ · Shelley A. Steenrod¹

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Abstract In the United States, the current epidemic of opioid use disorders impacts many parents and their children. Historically, interventions for parents with substance use disorders have focused on two separate areas, achieving and maintaining abstinence and learning parenting skills. These interventions do not address the parent/child relationship, and the impact of parental opioid use disorder on attachment. Insecure attachment, particularly disorganized attachment, negatively affects the child's development and safety. Attachment should always be considered when doing a safety assessment or planning an intervention for parents with opioid use disorders. This conceptual paper describes the impact of parental opioid use on attachment across the developmental span of childhood, highlighting research about opioid use disorder, parenting, and attachment which is relevant for practitioners working with parents with opioid use disorders, as child protection workers, substance abuse counselors, or therapists. Identification, attachment assessment tools, and empirical research on attachment-based interventions are discussed.

Keywords Child protection · Substance use disorder · Opioids · Opioid use disorder · Attachment

Introduction

Opioid use disorders are a public health crisis in the United States. Approximately 4.3 million adolescents and adults misuse prescription opioids and 435,000 people regularly use heroin (SAMHSA, 2014). In the past year, the numbers are much greater, 12 million and 914,000 respectively (SAMHSA, 2014). The consequences of opioid use disorders are significant. Long-term opioid users have a morbidity rate 6–20 times higher than the general population (Hser, Evans, Grella, Ling, & Anglin, 2015), in part because of opioid overdoses. In 2014, the number of fatal prescription overdoses had tripled from 2001 and the number of deaths from heroin overdoses was six times higher (NIDA, 2015).

Opioid use disorders impact not just the person using, but their children as well. While some children of parents with substance use disorders do not experience maltreatment, they are at a much higher risk than other children (Mayes & Truman, 2002; Seay & Kohl, 2015). The number of children in foster care is rising (United States Department of Health and Human Services, 2015), and many states have attributed these changes to the rising rate of opioid use disorders (Kamp & Campo-Flores, 2016). From 1998 to 2012, the number of cases in which children were removed due to parental alcohol or substance use rose from 14 to 31 % (Gardner, 2014). These children have more negative outcomes than other children in foster care (Lloyd & Atkin, 2014). This effect is stronger for children of parents who use cocaine or opioids compared to alcohol, methamphetamine or cannabis (Brook, McDonald, Gregoire, Press, & Hindman, 2010; Choi & Ryan, 2007; Green, Furrer, Worcel, Burrus, & Finigan, 2007; Grella, Needell, Shi & Hser, 2009).

✉ Rebecca G. Mirick
rmirick@salemstate.edu

Shelley A. Steenrod
ssteenrod@salemstate.edu

¹ School of Social Work, Salem State University, Salem, MA 01970, USA

Opioid use disorders are an important issue in work with children and adolescents, in both child protection and other mental health settings and children are a critical consideration in work with parents with substance use disorders. Parents with opioid use disorders are less likely to be emotionally available or responsive to their children's needs (Suchman, Pajulo, DeCoste, & Mayes, 2006). Not only do opioids have a substantial impact on parents' functioning, but parents with substance use disorders are more likely to have histories of childhood maltreatment and negative relationships with caregivers (Freeman, Collier, & Parillo, 2002; Medrano, Hatch, Zule, & Desmond, 2002; Grella, 1997). While occasional mis-attunement or unresponsiveness does not significantly affect the parent/child relationship, consistent lack of responsiveness negatively impacts the development of attachment (Bowlby, 1969). Practitioners working with parents with opioid use disorders, as child protection workers, therapists, or substance abuse counselors, need to be well-informed not just about treatment of opioid use disorders, but also about the intersection of opioid use disorders, attachment, and child development. Understanding the way each of these factors impacts the others allows practitioners to intervene with families not just about addiction or parenting skills, but in ways which are informed by attachment theory and research. Unlike many interventions with opioid use disorders, this article will not look just at opioid use disorders or parenting skills. Instead, it will review the research on substance use disorders and attachment, and emphasizing where opioids specifically are discussed. The research on opioid use disorders and parenting, attachment theory, and the relationship between these factors will be reviewed and then, research on assessment tools and interventions for this population will be reviewed and discussed.

Literature Review

Current Opioid Use, Abuse, and Dependence

According to the DSM-V (APA, 2013), an opioid use disorder is characterized by "impaired control" (using more than intended, cravings, unsuccessful efforts to decrease use, substantial time getting/using/recovering from use), "social impairment" (not meeting work, school, or home obligations, missing important activities, social or interpersonal problems), "risky use" (use in a physically dangerous situation, use with knowledge of problems from use), and "pharmacological properties" (tolerance, withdrawal). Two of these criteria must be present.

The trajectory of opioid use disorders has changed over time. Cicero, Ellis, Surratt and Kutz (2014), in a study of heroin users in treatment, found that after the 1990s, 75 %

began opioid use with prescription drugs compared to 20 % before the 1990s. The demographics have changed with these changing patterns of use. Current heroin users are on average 22.9 years at first use, are predominately white (90 %), and 50 % female. Before the 1990s, the average age of first use was 16.5 years. Fifty percent were white and 17 % female. With these changing demographics, many more women of childbearing/rearing age are beginning to use or are using opioids, starting with prescription drugs and frequently moving on to heroin.

Opioid Use Disorder and Child Maltreatment

In order to review the impact of opioid use disorders on parenting and attachment, we searched the following electronic databases: PsychINFO, Social Sciences Citation Index, Academic OneFile, and ScienceDirect for articles published after 1999. Keywords used were opioid use disorder, parenting, opioids, mother-child relations, and attachment. We also checked reference lists and articles which cited relevant works.

Parental substance use disorder can negatively impact children in a variety of ways. It is associated with high rates of problem behaviors such as truancy, school suspension, legal involvement, and substance use (Barnard & McKeganey, 2004; Kolar, Brown, Haertzen, & Michaelson, 1996; Solis, Shadur, Burns, & Hassong, 2012). Although specific substances impact parenting and family functioning in unique ways due to their different characteristics (Hogan, 1998; Irwin, 1995), little research has looked specifically at parenting with opioid use disorders compared to other substance use disorders (Hogan, 2003; Slesnick, Feng, Brakenhoff & Brigham, 2014). Depressants such as opioids impact parents' behaviors and emotions differently than stimulants like cocaine or methamphetamine (Irwin, 1995). Some research suggests that mothers with opioid use disorders have fewer negative parenting behaviors than those with alcohol use disorders (Slesnick et al., 2014) and are less intrusive and hostile than mothers who use cocaine (Tronick et al., 2005), perhaps due to the effects of opioid use, such as feelings of well-being and decreased anxiety (Slesnick et al., 2014). However, the intense feelings of pleasure caused by opioid intoxication are followed by drowsiness and slowed thinking. Loss of consciousness occurs with too high a dose. These effects can clearly impair parenting. Mothers' awareness of these issues and their children's needs may change the impact of opioid use, as mothers often try to protect their children from being exposed to impaired parenting by trying to avoid intoxication and withdrawal in front of their children or using when their children were at school or daycare (Richter & Bammer, 2000; Taplin & Mattick, 2015).

Families are impacted economically and socially by opioid use disorders. Compared to alcohol and methamphetamine, heroin is more strongly associated with poverty, illegal activities, and illnesses like HIV and hepatitis (Hogan, 1998). Heroin use, especially during pregnancy, is highly stigmatized (Banwell & Bammer, 2006; Pinkala & Sandlund, 2015). Mothers often engage in harm reduction strategies to try to protect their children from these financial and social impacts of opioid use disorders (Richter & Bammer, 2000). Even with strategies in place, caregivers are sometimes unable to maintain a safe environment. Issues include lack of supervision, exposure to illegal activities, and unsafe adults (Banwell & Bammer, 2006; Dawe & Harnett, 2007; Powis, Gossop, Bury, Payne, & Griffiths, 2000; Richter & Bammer, 2000).

Opioid use disorders negatively affect child welfare involvement. In a large study of children in foster care, Green et al. (2007) found that children of mothers who used opioids and cocaine remained in foster care longer than children of mothers who used alcohol, methamphetamine, or cannabis. Overall, parents with opioid use disorders obtain family reunification slower than that parents who use alcohol or other drugs (Brook et al., 2010; Choi & Ryan, 2007; Grella et al., 2009). It is unclear whether this is due to the stigma around opioid use disorders compared to alcohol or cannabis (Bammer & Banwell, 2006; Pinkala & Sandlund, 2015), lower levels of treatment completion (Choi & Ryan, 2006) and high rates of relapse (Hser et al., 2015) or more impaired parenting.

Opioid Use and Parenting

Opioid use disorders typically cycle through periods of intense use and periods of abstinence (Hser et al., 2015; Richter & Bammer, 2000). With opioid use disorders, obtaining and using the drug is often prioritized over family or work responsibilities (APA, 2013; Pinkala & Sandlund, 2015). Intense use can negatively impact parenting in many ways, including disrupting family routines, creating financial problems, and decreasing parental involvement with children (Richter & Bammer, 2000). In a qualitative study of 22 heroin-dependent mothers, mothers described using harm reduction strategies to protect their children from these consequences of their heroin use, including trying to maintain a small habit, placing children in childcare, using when they were in school, and giving custody to a family member (Richter & Bammer, 2000). Methadone was seen as helpful in terms of maintaining a routine and facilitating access to services. In spite of these strategies, almost all the mothers believed their use impacted their parenting. They described different reactions to their children when intoxicated, either being detached from their child or overwhelmingly, intrusively

affectionate. Some mothers felt that even methadone maintenance impacted their parenting, causing fatigue which made caring for small children difficult.

Parental opioid use disorders affects children differently depending on their developmental age. Approximately 180,000 children are born yearly with neonatal abstinence syndrome (NAS) due to opioid use during pregnancy (Caitlin, 2012). Newborns with NAS experience can require hospitalization (Minear & Zuckerman, 2013). Significant stigma exists around opioid use during pregnancy, even when the opioid is used for harm reduction purposes, such as medication assisted treatment (Banwell & Bammer, 2006; Minear & Zuckerman, 2013; Pinkala & Sandlund, 2015). In the hospital, mothers often experience blame around opioid use, and unsupportive nurses who advocate for babies' placement in foster care instead of supporting mother/baby attachment (Banwell & Bammer, 2006; Bauer & Dierdrik, 2014; Velez & Jansson, 2013). Prenatal exposure to opioids is associated with behavioral problems in young children, older children, and adolescents (Messinger et al., 2004).

Opioid use disorders often are associated with limited parental responsiveness and empathy towards children (Hogan, 2007; Mayes & Truman, 2002; Richter & Bammer, 2000; Rizzo, Newmann, King, Hoey, Finnell & Blondell, 2013). Salo et al. (2010) found that mothers with opioid use disorders had lower scores of maternal sensitivity and non-intrusiveness than mothers without a substance use disorders or mothers with depression. Higher levels of hostility and lower levels of sensitivity were present when the children were three (Salo et al., 2009). Women with substance use disorders often have a history of child maltreatment and insecure attachment (Freeman et al., 2002; Medrano et al., 2002; Grella, 1997). The research does not differentiate whether these maternal behaviors stem from the opioid use disorder or from the maternal attachment history, although low levels of empathy persist for parents in medication assisted treatment (Rizzo et al., 2013), which suggests that one component of this might be about the mothers, not the opioids. On the other hand, the effects of opioids do impact responsiveness. Caregivers can miss children's emotional cues because their attention is focused on the cycle of obtaining and using opioids, not the child (Barnard, 2003; Dawe & Harnett, 2007; Hogan, 2007) or seem depressed and withdrawn in interactions with children (Mayes & Truman, 2002). The physical symptoms of withdrawal can lead to increased harshness and less physical contact (Dawe & Harnett, 2007). Caregivers may be separated from children for lengthy periods of time due to foster care placement, incarceration, or escalating drug use (Hogan, 2007). These kinds of losses can impact the child's ability to form new attachment relationships, especially when time

spent with new caregivers is brief (Kalland & Sinkkohen, 2013).

Although the impact of insecure attachment may be mediated by the presence of a non-using caregiver (Edwards, Eiden & Leonard, 2006), often children of parents with opioid use disorders, even in treatment, have limited access to adults without substance use disorders. One study of 70 parents in methadone maintenance treatment found that 44 % reported other adults in the home used illicit drugs and 21 % said the babysitter used illicit drugs or drank alcohol excessively (Kolar et al., 1996). Mothers with substance use disorders are often isolated from friends who do not use substances, as well as family (Banwell & Bammer, 2006) and many have "dysfunctional family backgrounds" (Barnard, 2003), including maltreatment, so often extended family and friends are not available as a resource (Banwell & Bammer, 2006).

Little of the research on parents with substance use disorders differentiates between opioid use and other substance use (Slesnick et al., 2014). This makes it difficult to determine unique factors to parenting with an opioid use disorder versus other substance use disorders. The research does not explore whether parents with opioid use disorders are less responsive to children's cues because of the effects of opioids, because of early childhood relationships and difficult experiences, or as seems likely, a combination of these factors as well as others impact the development of the child's attachment to the parent.

Theoretical Framework

Attachment

Attachment theory, based on the work of Bowlby (1969/1982), identifies attachment as a biologically based emotional connection between the caregiver and the infant. This relationship is critical to the socioemotional development of the child (Bowlby 1969/1982). For mothers, this connection begins in pregnancy (Rubin, 1984). The child's attachment to the primary caregiver can be secure or insecure. A secure attachment develops when the primary caregiver is responsive to the child's emotional needs, especially during periods of stress or intense emotional distress. Throughout infancy and early childhood, a secure attachment is reinforced and maintained by the reciprocal nature of the caregiver/child relationship. The caregiver responds to the child's sounds, needs, or distress, and the child responds back, with smiles, decreased cries or gestures. Secure attachment helps the child develop cause-and-effect thinking and understand and regulate feelings such as hunger, fatigue, stress, or sadness (Rees, 2007). A securely attached child can be comforted by the caregiver

in times of stress, seeks proximity to the caregiver, and uses the caregiver as a "secure base" from which to explore the world (Bowlby, 1969, 1982). Attachment teaches children about relationships with others (Bowlby, 1982). A securely attached child sees relationships as valuable (Rees, 2007) and develops internal schemas of themselves as worthy of relationships (Bowlby, 1969, 1982). Securely attached children view the world as safe and are able to develop positive relationships with others (Bowlby, 1969, 1982).

The child's attachment to the primary caregiver may be insecure rather than secure. Ainsworth and Bell (1970) identified two types of insecure attachment, ambivalent attachment and avoidant attachment. A third type, disorganized attachment, was added later (Main & Solomon, 1990). Ambivalent attachment develops when primary caregivers are only sometimes attuned to children's needs. Children with ambivalent attachment view relationships as important and valuable. They have learned that attention from primary caregivers is inconsistent and they cannot always get their needs met (Rees, 2007). They strongly desire attention from caregivers, but sometimes reject it. Therefore, they are distressed when their caregiver leaves but cannot always be comforted by the caregiver when they return. Children with ambivalent attachment often develop effective strategies to obtain attention from caregivers which are not always positive (Rees, 2007). Avoidant attachment develops when caregivers are consistently unattuned to children's needs (Rees, 2007). Children with avoidant attachment do not value relationships and do not try to obtain caregivers' attention. They do not show distress when separated from the caregiver. They have poor social skills and struggle to make friends, read social cues, and respond appropriately to others. They do not seek comfort from primary caregivers because they do not believe they will be able to get their needs met. Disorganized attachment occurs when caregivers are both unattuned and frightening or unsafe (Rees, 2007). Children are unable to develop an effective, functioning strategy to get their needs met because the caregiver they want to turn to for safety when they are frightened is also the cause of their fear. Physical abuse and neglect may be present in the home, or the caregiver may be overwhelmed by trauma or loss. Children with disorganized attachment see no value in relationships and believe they are frightening and painful (Rees, 2007).

While attachment remains important to socioemotional development through childhood and adolescence (Beijersbergen, Juffer, Bakermans-Kranenburg, & van IJzendoorn, 2012), children's attachment needs change as they get older. Latency aged children do not need physical closeness to their caregiver, but do require a psychological closeness, an awareness of the caregiver's availability

(Allen, 2011a, 2011b). Latency aged children are more involved in the world outside the family than younger children. The ability to build friendships and succeed in school are important developmental tasks. Securely attached children have stronger social skills, a better ability to regulate emotions, and higher self-efficacy and self-esteem than insecurely attached children (Groh, Fearon, Bakermans-Kranenburg, van IJzendoorn, Steele, & Roisman, 2014). Insecurely attached children may have more difficult interactions with peers, behavior problems in school, or learning issues (Moretti & Peled, 2004). Attachment also impacts parents' behavior. Parents of securely attached children monitor them more closely than parents of insecurely attached children. Kerns, Aspelmeier, Gentzler, & Grabill (2001), in a study of 3rd and 6th graders, found that children who were securely attached, especially the 6th graders, were more cooperative with this monitoring than those who were insecurely attached.

Like latency aged children, securely attached adolescents need the availability of the caregiver and will turn to caregivers for comfort in times of stress (Moretti & Peled, 2004). Insecurely attached adolescents experience the lack of the "safe haven" created by a secure attachment (Bowlby, 1982). They struggle to develop independence and competence without this "secure base" from which to explore the world (Moretti & Peled, 2004). In adolescence, secure attachment continues to predict positive peer relationships (Moretti & Peled, 2004) as well as higher self-esteem, more frequent use of positive coping skills to manage stress, and more support seeking (Armsden & Greenberg, 1987). Adolescence is a high risk time (Moretti & Peled, 2004), but less so for securely attached adolescents. They are less likely to use substances, binge drink, engage in risky sexual behaviors, or leave school and less likely to experience depression, anxiety, eating disorders, or suicidality (Howard & Medway, 2004; Moretti & Peled, 2004; Weinfield, Whaley, & Egeland, 2004).

Opioid Use and Attachment

Caregiver substance use disorder, including opioid use disorder, is associated with insecure attachment with children (Hogan, 2007; Quinlivan & Evans, 2005). Substance use can prevent the formation of an initial attachment with an infant by interrupting the cycle of reciprocal interactions between the caregiver and child or it may disrupt a previously secure attachment relationship if the caregiver's responsiveness becomes inconsistent or nonexistent (Soderstrom & Skarderud, 2009). An inconsistent pattern of responsiveness, as can occur when caregiving is impaired by intoxication or withdrawal (Dawe & Harnett, 2007) is linked to ambivalent attachment (Rees, 2007). When the parent is rarely able to be responsive avoidant

attachment is more likely (Rees, 2007). Parents' own attachment history and attachment style impacts the attachment relationship they develop with their children (Punamaki & Belt, 2013). Parents who have experienced maltreatment as children may not have developed strong reflective functioning skills and are more likely to struggle to be responsive to their children (Swanson, Beckwith, & Howard, 2000), even during periods of abstinence. Substance use disorders and early childhood maltreatment are highly correlated (Freeman et al., 2002; Medrano et al., 2002; Grella, 1997) so many parents with substance use disorders may struggle with this aspect of parenting. Kalland and Sinkkolen (2013) found that for foster mothers, an autonomous classification of adult attachment (on the AAI) was necessary for a secure attachment.

Infancy

Even before a child's birth, opioid use negatively impacts attachment. Shieh and Kravitz (2002), in a study of 40 women who used illicit drugs during pregnancy, found that the mother's guilt and worry about substance use negatively impacted maternal-fetal attachment. Due to the stigma of opioid use during pregnancy and concerns about legal consequences, mothers may not seek prenatal care or may keep their opioid use secret (Minear & Zuckerman, 2013). NAS presents a risk for early attachment. Symptoms include irritability, difficulty being calmed, feeding and sleeping issues. Symptoms are the most severe in the first few weeks after birth but can persist until up to 7–8 months (Minear & Zuckerman, 2013). Guilt over NAS and use during pregnancy can be a barrier to maternal-fetal attachment (Shieh & Kravitz, 2002). In addition, NAS symptoms may make it challenging for the caregiver and infant to engage in the reciprocal interactions which form the foundation of attachment, particularly when the symptoms persist for months (Pajulo, Suchman, Kalland, & Mayes, 2006; Velez & Jansson, 2013). The high needs of the infant, including deficits in the ability to regulate sleep, wakefulness, eating, and distress mean they are more difficult to soothe and are less responsive than other infants. With the physical discomfort and irritability that are characteristic of NAS, infants may be less responsive to the caregiver. Caregivers with chronic substance use disorders often have low tolerance for the infant's distress and the stress of parenting, as well as an impaired ability to read the infant's cues (Pajulo et al., 2006; Suchman, DeCoste, Ordway, & Bers, 2013; Velez & Jansson, 2013). This combination makes the first months of parenting more challenging and stressful, and may overwhelm the caregiver, making it difficult to remain attuned to the infant. Overwhelmed, the caregiver can withdraw from the interaction with the baby, leading to less maternal

responsiveness and a greater risk for insecure attachment (Pajulo et al., 2006). Pregnancy is a strong motivator for sobriety (Velez & Jansson, 2013) and the postpartum period, especially with the increased stressor of an infant with NAS, is a high risk time for relapse (Rutherford, Potenza, & Mayes, 2013). However, this period can also be an opportunity for intervention. Educating caregivers on their infants' attachment needs at this stage may create a protective factor against relapse and help caregivers meet their babies' needs and help caregivers learn the skills needed for secure attachment (Velez & Jansson, 2013).

Even without the presence of NAS, opioid use can disrupt the formation of an initial attachment relationship (Soderstrom & Skarderud, 2009). Intoxication hampers parents' attunement to the infant's emotional needs and responsiveness to emotional cues (Dawe & Harnett, 2007; Maye & Truman, 2002). Caregivers may be intrusive with children which can be frightening and overwhelming, or be disengaged and unresponsive to the child's needs (Richter & Brammer, 2000). The drowsiness that follows euphoria is detrimental to the attachment relationship, as parents are detached (Dawe & Harnett, 2007). A pattern of inconsistent responsiveness is associated with ambivalent attachment (Rees, 2007). Opioid withdrawal, characterized by irritation and physical discomfort, limits a caregiver's ability to be attuned to the child's needs because the physical discomfort of withdrawal can be overwhelming or all-consuming (Dawe & Harnett, 2007). Physical abuse or aggression towards children may be more likely during withdrawal, due to irritability and physical pain (Dawe & Harnett, 2007). When physical abuse or neglect is present, avoidant attachment is more likely to develop. If the child is frightened by the parent and cannot seek safety with the parent, then disorganized attachment is likely (Rees, 2007). The cycle of use, intoxication, and withdrawal creates a situation in which caregivers' responses to children are unpredictable and inconsistent, which increases the chances of insecure attachment. Research shows that children of caregivers with substance use disorders have higher levels of insecure attachment, especially disorganized attachment, than children of caregivers without substance use disorders (Pajulo et al., 2006; Swanson et al., 2000).

Latency and Adolescence

The attachment relationship may change as the child develops. Even when a secure attachment developed in infancy, perhaps during a period of maintained sobriety or when the child was being cared for by an alternative caregiver, such as a family member or foster parent, disruptions of attuned parenting can change the attachment relationship (Weinfeld et al., 2004). These disruptions can occur if a caregiver enters a period of heavy opioid use.

While latency aged children no longer need the immediate proximity of the caregiver for secure attachment, the availability of that caregiver remains important (Allen, 2011a, 2011b). When a caregiver is actively using opioids, much of their time may be focused on obtaining, using, and recovering from drug use (Barnard, 2003; Dawe & Harnett, 2007; Richter & Brammer, 2000). Caregivers may take children with them to obtain drugs, enroll them in after-school programs longer to protect them from the drug use, or leave them home alone unattended (Barnard, 2003; Richter & Brammer, 2000). All of these options detract from the child's attachment need for caregiver availability (Allen, 2011b). Even when present, intoxication and withdrawal will impact the caregiver's ability to be responsive to the child (Dawe & Harnett, 2007; Richter & Brammer, 2000). Like latency aged children, adolescents require the availability of a parent for secure attachment. Parents who are using opioids may be disconnected, "nodding off" or experiencing the unpleasant effects of withdrawal. These behaviors negatively impact their availability to make adolescents in times of emotional dysregulation or stress. Adolescents are exploring the world in different, often less safe ways, than younger children, and parents who are unavailable will be unable to serve this role of secure base" for adolescents as they develop independence. These factors can disrupt a secure attachment or further reinforce an insecure attachment.

Implications for Child Welfare Practice

As rates of opioid use disorders increase, an understanding of how they impact parenting, child well-being, attachment, risk, and safety is essential for practitioners in child protection, outpatient mental health, early intervention, and child protection who work with parents with opioid use disorders. The following section will review signs of opioid use, discuss assessing for attachment, and describe interventions which can strengthen the parent-child relationship.

Identification

The identification of opioid use is a key step in intervening with families. Even within child protection, workers do not always effectively identify substance use (Brook et al., 2010). Other than drug testing, no valid and reliable measures have been developed to identify parental opioid use. Even drug screening has significant limitations. Although some opioids, like methadone, can be detected in urine screens 10–14 days after use, heroin only remains in urine for 24 h (Minear & Zuckerman, 2013). Screening for opioids is usually only done with indicators of substance

use. For a newborn, these include a history of an opioid use disorder, lack of prenatal care, or medical issues associated with prenatal opioid use (Minear & Zuckerman, 2013). A new mother may show signs of withdrawal in the hospital, especially with a longer hospital stay (Minear & Zuckerman, 2013). Additional signs include child maltreatment, financial issues, and changes in mood from visit to visit, such as from energetic to lethargic or physically ill to healthy. While these are known signs of opioid use disorders, validity or reliability for their use has not been determined.

Attachment Assessment

Assessment for attachment is a critical component of understanding the parent/child relationship. A practitioner can use their understanding of the characteristics of secure attachment to informally observe attachment in a parent/child dyad, although informal assessment does not have any demonstrated validity or reliability. There are also formal tools for evaluating attachment which do have validity and reliability.

Informal Assessment

Securely attached infants and toddlers seek out the caregiver when upset and express distress when the caregiver leaves. Children with insecure attachment may not be distressed when the caregiver leaves or may be distressed but unable to be soothed by the caregiver's return. For children, additional signs of insecure attachment include an infant not engaging in the typical social back and forth with an adult, no preference for primary caregiver over strangers, lack of eye contact, smiling or social interactions. For caregivers, responsiveness, empathy, and early attachment are important considerations (Pajulo et al., 2006; Rees, 2007).

Formal Assessment Tools

Several assessment tools measure attachment. Other tools do not explicitly measure attachment but assess related constructs, such as maternal responsiveness and emotional availability. The Strange Situation Procedure (Ainsworth, Blehar, Waters, & Wall, 1978) is considered the "gold standard" (Kalland & Sinkkonen, 2013) measure of attachment. The SSP is a laboratory measure for children ages 11–15 months which exposes children to a series of stressful episodes. Children's responses are observed. The SSP has been adapted for older children. The Preschool Assessment of Attachment can be used with children ages 2–5 years and the School-Age Assessment of Attachment for children ages 6–12 years (Farnfield, Hautamaki,

Norbeck & Sahhar, 2010). The School-Age Assessment is the newest of the measures but so far, two preliminary studies have supported its validity (Farnfield et al., 2010).

The Adult Attachment Interview (AAI) measures adult attachment (Hesse, 2008). This is a semi-structured interview exploring at early attachment relationships. Questions focus on events in childhood when the need for an attachment figure would have been strong, such as an illness or injury. The AAI has been validated by numerous empirical studies (Farnfield et al., 2010). The Transition to Adulthood Attachment Interview is an adaptation of the AAI for young adults ages 16–25 years. The validity of this measure has not yet been determined, although it is theoretically supported (Farnfield et al., 2010).

Several tools, the Emotional Availability Scale (EAS) (Birgen, Derscheid, Vliegen, Closson & Easterbrooks 2014) and the CARE Index (Crittenden, 2005) assess the parent's relationship with a child by observing a free play period with parent and infant. The EAS rates the parent/child dyad for maternal sensitivity, structuring/intrusiveness, and hostility. The validity of this tool with this population has been supported (Espinete, Jeong, Motz, Racine, Major, & Pepler, 2013). The CARE index measures maternal sensitivity to a child's cues (Crittenden, 2005) based on a brief (3–5 min) videotape of the dyad playing. This tool has been validated with children of caregivers with substance use disorders (Farnfield et al., 2010). A significant benefit is that it can be administered, as a video recording, by a paraprofessional in the client's home or other setting.

Intervention

Parenting interventions for caregivers with substance use disorders have traditionally focused on cognitive-behavioral approaches to strengthening parenting skills (Renk et al., 2016; Suchman, McMahon, et al. 2006). These approaches have been criticized for ignoring the attachment component of the parent-child relationship (Suchman, Mayes, Conti, Slade & Rounsaville, 2004). Many of these approaches have not demonstrated effectiveness at changing parenting behaviors (Renk et al., 2016) nor improving the quality of the parent/child relationship (Suchman et al., 2004). Parenting skill classes may not be able to address the needs of opioid using caregivers and their children (Suchman et al., 2004). Some caregivers may lack a solid attachment foundation and struggle with developing and maintaining secure attachment, even during periods of abstinence (Swanson et al., 2000). These caregivers need interventions which will strengthen the attachment relationship (Suchman, McMahon, et al., 2006). Unlike traditional parenting classes, attachment based approaches do not focus on discipline and behavior

management. Instead, they prioritize the development of the caregiver's empathy, reflective functioning, and responsiveness which are all related to secure attachment (Bowlby, 1969; Suchman et al., 2013).

Several interventions focus on improving the emotional component of the mother/child relationship with the goal of increasing parents' responsiveness to their children and secure attachment. Several programs which focus on strengthening attachment are described below. While they have been studied with parents with substance use disorders and included caregivers with opioid use disorders in their samples, none have been designed or researched specifically with parents with opioid use disorders. The research suggests that interventions focused on attachment are more effective than traditional parenting programs at strengthening parent/child relationships in families where mothers have substance use disorders (Suchman, DeCoste, Castiglioni, McMahon, Rounsaville, & Mayes, 2010).

Psychodynamic Mother-Infant Group

This is a 20–24 weeks, 3 h, weekly outpatient group for mother-infant dyads when mothers are still actively using. Mothers in this group showed decreased hostility compared to mothers in a psychosocial support group (PSS). Both groups showed improvements in mother-infant interactions, maternal abstinence, and maternal depression (Belt, Flykt, Punamaki, Pajulo, Posa & Tamminen 2012). Maternal intrusiveness decreased in both groups, but more so in the psychodynamic mother-infant group. After attending this group, maternal hostility decreased to a similar level as a comparison group of non-substance using mothers (Punamaki & Belt, 2013).

Attachment and Biobehavioral Catch-Up (ABC) Intervention

This manualized intervention for mother-child dyads consists of ten 1 h in-home sessions (Bick, Bernard, & Dozier, 2013). The program targets mothers' frightening behavior, helping mothers recognize children's needs, even when children are avoidant, respond in a nurturing manner to children, and "follow their children's leads with delight" (p. 313). Ultimately, the goal is to improve attachment, specifically decreasing disorganized attachment. A randomized clinical trial ($N = 120$) compared this intervention to a similar length/hours program that teaches cognitive and language development. At the end of treatment, the children in the ABC group were more likely to have secure attachment and less likely to have disorganized attachment. In a pilot study with mothers with substance use disorders ($N = 21$) in a residential program, mothers

who were randomly assigned to ABC were more sensitive to their infants and engaged in more supportive parenting behaviors (Berlin, Shanahan, Appleyard, & Carmody, 2014).

Mothering from the Inside Out (MIO)

MIO is a 12 week, psychodynamic individual approach focused on helping mothers of children 0–3 years with substance use disorders develop reflective functioning (Suchman, DeCoste, McMahon, Rounsaville, & Mayes, 2011). A pilot study ($N = 47$) compared the MIO intervention with parent education classes. Mothers in the MIO group had higher levels of reflective functioning post-treatment. The mother/infant dyads in the MIO had more positive interactions post-treatment (Suchman et al., 2011).

There are some limitations to applying them to families when a parent has an opioid use disorder. More research is needed to determine effective attachment-based interventions specifically for parents with opioid use disorders and to identify attachment-focused interventions for older children, as current interventions focus on children under 3 years. Research on how to incorporate harm reduction into these approaches is also needed. Qualitative research clearly describes mothers' use of harm reduction techniques to protect their children from the impact of opioid use (Richter & Bammer, 2000; Taplin & Mattick, 2015). Research is needed to explore the impact of harm reduction approaches on the attachment relationship and how social workers could reinforce caregivers' use of these strategies. Child protection rarely incorporates harm reduction approaches (Powis et al., 2000; Shlonsky et al., 2007). Shlonsky et al. (2007) suggests this is due to the difficulty of acknowledging that even with child protection involvement, children are not always safe. However, given the realities of child protection work, the frequent use of medication assisted treatment such as methadone or buprenorphine, another harm reduction approach, and increasing rates of opioid use, future research should include a consideration of harm reduction approaches, how they could be incorporated into attachment approaches, and if they might be able to be used in ways which facilitates the development of a secure attachment.

Conclusion

The current epidemic of opioid use disorders has a significant impact on both the adults and adolescents who use opioids and the children of opioid users. The impact of opioid use on the development of the secure attachment of children can be significant and lead to long-term challenges for children. By incorporating attachment into a child

protection risk assessment, the need for attachment based interventions, along with substance abuse treatment, can be better understood.

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Compliance with Ethical Standards

Conflict of interest Rebecca G. Mirick declares that she has no conflict of interest. Shelley A. Steenrod declares that she has no conflict of interest.

Ethical approval This article does not contain any studies with human participants or animals performed by any of the authors.

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