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A Closer Look at Juvenile Homicide

Kids Who Kill

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Chapter 1
Introduction

Homicide can be defined as the killing of one human being by another (Justia.com). Adding to this definition, the FBI's Uniform Crime Reporting (UCR) Program defines murder and nonnegligent manslaughter as the willful (nonnegligent) killing of one human being by another (Federal Bureau of Investigation 2014). Thus, juvenile homicide or murder is the killing of a human being by a juvenile, who, according to the Department of Justice (DOJ), is any individual under the age of 18 (38. "Juvenile Defined" 2020). Homicide by youth is a highly perplexing crime within our society. Shocking headlines of kids who kill leave the public at a loss as to how these acts of murder are committed by such young perpetrators. Recall infamous cases such as Eric Smith, the 13-year-old convicted of second-degree murder for the bludgeoning of a 4-year-old peer, or 14-year-old Joshua Philips, who was sentenced to life in prison for the murder of his 8-year-old neighbor.

Despite the ample public attention that juvenile homicides receive, the most recent data from the US Department of Justice reveals that juvenile homicide only accounted for 7% of all known murders in the U.S. as recent as 2015 (OJJDP). Even more rare, are child murderers aged 0–14, representing less than 1% of all homicide perpetrators in the U.S. (Hemenway and Solnick 2017). While the rates of juvenile homicide appear to be relatively low, these acts continue to generate clinically relevant questions and concerns at the individual, legal, and community levels. Accordingly, a broad exploration of the legal, individual, and social aspects of juvenile homicide is covered in this brief.

Research emphasizing juvenile homicide and related issues has expanded over time, beginning in the mid 1900's, becoming more prominent in the late 1990's, through present day. Growing attention to juvenile homicide was likely due to the rise in juvenile homicide rates in the United States between 1984 and 1994. Perhaps this increased attention led to the steady drop in rates between 1994 and 2003 as the estimated number of murders involving a juvenile offender fell 65% to its lowest level since at least 1980. After 2003, the rates have fluctuated, although continued to

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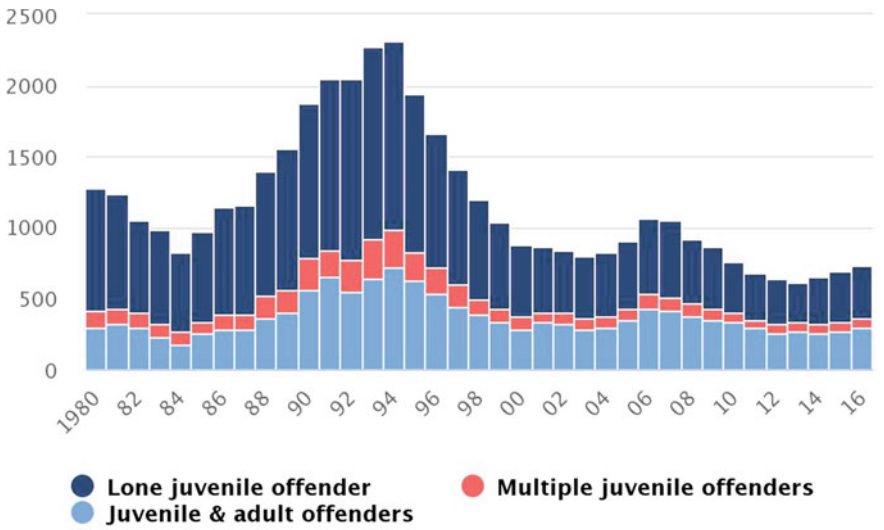

Fig. 1.1 Juvenile homicide rates, 1980–2016 (*OJJDP statistical briefing book*. Online. https://www.ojjdp.gov/ojstatbb/offenders/qa03105.asp?qaDate=2016)

stay significantly below the 1994 peak, as illustrated in Fig. 1.1. The juvenile murder rate reached its lowest level in 2012, falling 83% below the 1994 peak; since then, the rate has increased slightly but remains relatively low (OJJDP 2016).

The alarming increase in juvenile homicides during the late 1980's to mid 1990's led to a wave of juvenile justice reform, targeting the reduction of juvenile violent crimes. As a result, the severity of punishment for violent juvenile offenders was substantially enhanced. These reforms resulted in higher transfer rates of juvenile homicide offenders (JHOs) to adult courts, where they were tried as adults and sentenced to adult prisons. While there has been a significant decrease in juvenile homicide rates since that time period, there is no evidence to suggest that these stricter policies are responsible. In fact, the major increase in juvenile homicide has been attributed to the crack cocaine drug market, growth of gangs, and easier access to firearms (Cornell and Malone 2017) during that time period.

Laws allowing youth to be tried as adults have been controversial, given the extensive research (Steinberg 2009) related to the neuropsychological underpinnings of youth and their impact on behavior. Youth are not fully developed psychologically or cognitively which impacts their decision-making, understanding of consequences, and thus, their behavior. Given what we know about the juvenile mindset and brain development, it seems evident that young people are unable to grasp the magnitude and wrongfulness of their behavior at the same level of understanding that an adult would. Moreover, it has been suggested that such strict punishment can lead to worse outcomes and higher rates of recidivism for convicted juvenile offenders (Redding 2008). Considering this, landmark juvenile homicide cases are reviewed in a later chapter, including the American Psychological Association's (APA) contribution and related impact on the matter.

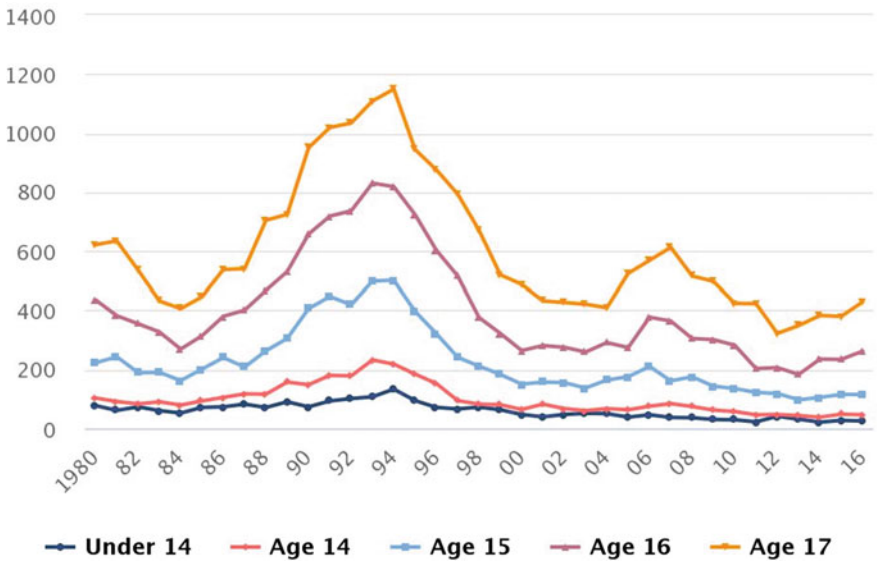

Fig. 1.2 Juvenile homicide offenders by age, 1980–2016 (*OJJDP statistical briefing book*. Online. https://www.ojjdp.gov/ojstatbb/offenders/qa03105.asp?qaDate=2016)

There are a variety of differences across juvenile homicide rates with respect to age, gender, and race (Cornell and Malone 2017; Heide 2003; Shumaker and Prinz 2000). Older juveniles have the highest rates of homicide with homicide offending increasing with age (OJJDP 2016). According to OJJDP, in 2015 about 9% of juvenile homicide offenders were under 15 years old, while 79% were ages 16 or 17. Trends of juvenile homicide offenders followed a similar pattern for both younger and older juveniles as illustrated in Fig. 1.2. Still, juveniles ages 16 and 17 accounted for both the largest increase and decline over time (OJJDP 2016). Figure 1.3 demonstrates how rare juvenile homicide is for females. Since 2002 there have been fewer than 100 female homicide offenders each year, and even before that, the highest number during the course of one year was 159 in 1992. When you compare this to the highest male rate of 2,656 in 1994, female juvenile homicideoffenders are relatively rare (OJJDP 2016). The rates of both male and female JHOs was at its lowest in 2013 before increasing each year (OJJDP 2016). Finally, Fig. 1.4 shows the differences between races in JHOs. The literature often cites that African American males make up the highest rates of juvenile homicide offenders (OJJDP 2016).

Not only do the rates differ among these demographic groups, but there are also many differences in the characteristics of the crime and individual factors. Additionally, there are known similarities that have led to the identification of common motives, methods, and related typologies (Cornell and Malone 2017; Heide 2003; Shumaker and Prinz 2000). Commonalities observed include several risk factors at the individual, familial, and environmental levels. Both the correlative differences and similarities indicate important clinical implications explored in the ensuing chapters.

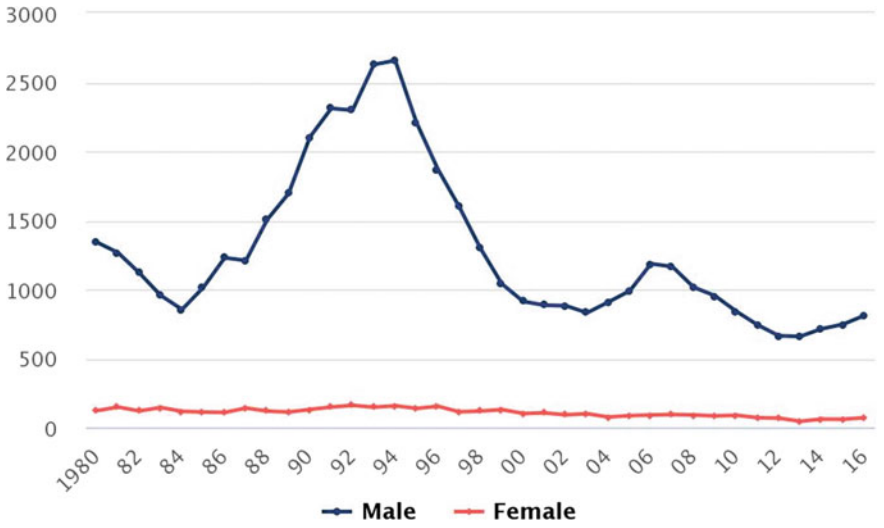

Fig. 1.3 Juvenile homicide offenders by sex, 1980–2016 (*OJJDP statistical briefing book*. Online. https://www.ojjdp.gov/ojstatbb/offenders/qa03105.asp?qaDate=2016)

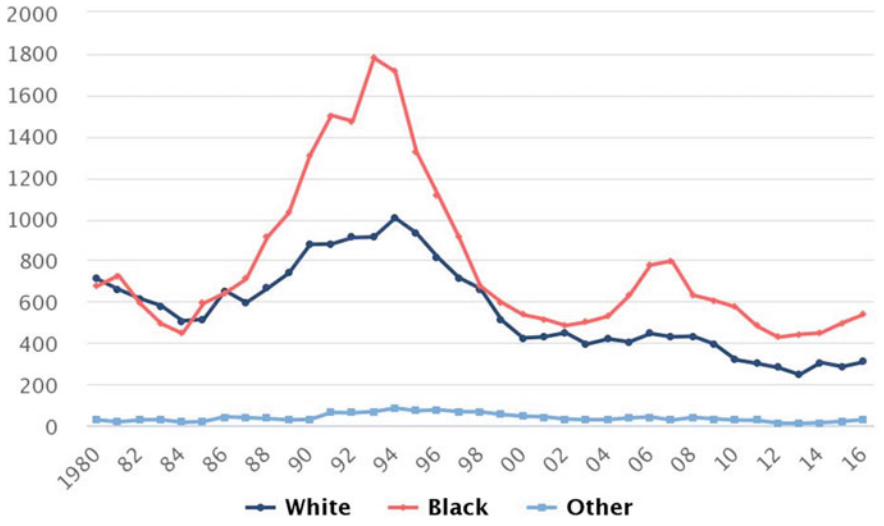

Fig. 1.4 Juvenile homicide offenders by race, 1980–2016 (*OJJDP statistical briefing book.* Online. https://www.ojjdp.gov/ojstatbb/offenders/qa03105.asp?qaDate=2016)

Interestingly, research distinguishing juvenile homicide offenders from other juvenile offenders has been minimal; however, more similarities than differences may exist between these two groups (Ahonen et al. 2015; DiCataldo and Everett 2008). Identifying and understanding predictive characteristics specific to juvenile homicide is important for the prevention and treatment of this population. There are few available interventions (Khachatryan et al. 2016) both during and post-incarceration for juvenile homicide offenders. In fact, few offenders receive any psychological treatment while incarcerated, especially those sent to adult prisons (Heide 2003). This poses a risk at both the individual and community levels. It is a key clinical issue that warrants further research, as lower recidivism rates for juvenile homicide offenders have been observed when treatment is incorporated (Heide 2013). Such findings bring to light important clinical implications, as they suggest that treatment can have a positive impact on future trajectories for these young offenders.

Identifying and understanding common factors specific to juvenile homicide can ultimately aid in the development and implementation of more effective prevention strategies and interventions for this population. Specifically, a greater understanding of the risk factors and motives observed among this population can aid in the continued development of preventative measures and may assist clinicians in the treatment of juvenile homicide offenders. Once released back into the community, JHOs rarely receive the appropriate mental health treatment necessary to thrive. Thus, a greater understanding of this population can aid in targeting specific needs for successful reintegration into society as well. The purpose of this brief is to explore the current theories, trends, and common factors related to juvenile homicide offenders in order to improve prevention, intervention, and reintegration.

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Chapter 2
Juvenile Homicide Offenders: Classifications/Typologies

The literature on JHOs has increasingly recognized the clinical diversity associated with these young offenders (Cornell et al. 1987a, b). Given the observed differences among JHOs, some researchers have attempted to construct classification systemsor typologies and associated risk factors to better understand these offenders (Cornell et al. 1987a, b; Shumaker and Prinz 2000). These classification approaches generally fall into three frameworks: (a) psychiatric/psychological constructs, (b) specific characteristics of the crime, and (c) the victim-offender relationship (Shumaker and Prinz 2000). While these classification systems are useful, it is important to keep in the mind that many of the earlier studies on juvenile homicide have several methodological problems. They are criticized for their small sample sizes, lack of control groups, and using data derived from case studies (Cornell et al. 1987a, b; Heide 2003; Shumaker and Prinz 2000). Despite the identified limitations, these early studies provide some evidence of commonalities and differences among juvenile homicide offenders. The recognition and exploration of these factors is critical, as it informs clinical practice for prevention and intervention.

2.1 Classification Based on Psychiatric/Psychological Constructs

Using a medical-model perspective, Stearns (1957) was one of the first researchers to suggest the presence of a biological or clinical syndrome when conceptualizing seemingly unexplainable murders (Shumaker and Prinz 2000). Following his approach, Miller and Looney (1974) studied 10 adolescents characterized as high-risk for homicidal behavior, the majority of whom were described as cold, nonempathic individuals, who lacked a value for human life and showed a propensity towards violence (Shumaker and Prinz 2000). The researchers concluded that there were two primary

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factors involved in juvenile homicide, "dehumanization and episodic dyscontrol" (Miller and Looney 1974; Shumaker and Prinz 2000). Others (Shumaker and Prinz 2000; Tooley 1975; Zenoff and Zients 1979) also used descriptors such as "cool," "canny," and "nonempathic" to describe traits associated with this group of offenders. Further, expanding upon the nonempathic category, Sorrells (1980) found two other groups of juvenile homicide offenders that he labeled "prepsychotic" and "neurotically fearful" (Shumaker and Prinz 2000). Thus, from these early studies emerged a prototypical offender who (a) lacked empathy, (b) did not suffer from apparent psychosis, (c) murdered either in a calculated manner or a fit of rage, and (d) had a biological predisposition for violent and aggressive behavior, traits commonly associated with psychopathic individuals (Shumaker and Prinz 2000).

While early researchers generated a picture of juvenile homicide offenders as seemingly psychopathic, investigators subscribing to a psychiatric perspective began moving away from this "psychopathic syndrome" when conceptualizing this population in the 1990's and instead, began focusing on classifying these offenders using diagnostic criteria from the Diagnostic and Statistical Manual of Mental Disorders (DSM; APA 2013). For instance, Myers and Kemph (1990) used the Diagnostic Interview for Children (DICA, DSM-III-R version) on a sample of 14 JHOs and found Conduct Disorder to be the most common diagnosis (86%). About half the subjects met criteria for substance use and anxiety disorders and a minority of subjects had a diagnosis of Oppositional Defiant Disorder, Attention-Deficit Hyperactivity Disorder, Major Depression, and Functional Enuresis. However, none of the subjects showed any evidence of psychotic symptoms (Myers and Kemp 1990; Shumaker and Prinz 2000).

There is considerable variability in studies investigating the extent of severe psychopathology in JHOs, particularly regarding the presence of psychosis among this population (Heide 2003). However, consistent with Myers and Kemp (1990), the majority of findings suggest that the presence of psychotic symptoms is relatively rare (Busch et al. 1990; Cornell et al. 1987a, b; Ewing 1990; Heide 2003; Shumaker and Prinz 2000; Zagar et al. 1990). While it is useful to understand specific diagnoses that may be associated with youth who murder, there are clear limitations to a classification system that fails to recognize the different motivational circumstances of juvenile homicide and the distinct set of risk factors that lead to these different circumstances (Cornell et al. 1987a, b; Shumaker and Prinz 2000).

2.2 Classification Based on Specific Characteristics of the Crime

In response to the limitations of classification systems born out of earlier psychiatric approaches, attempts were made to develop a typology based on specific characteristics of the offense. Most notable were typologies developed by Cornell (1989) (Cornell et al. 1987b) and Myers (Myers et al. 1995), which shifted the focus from

personal factors to contextual factors (Shumaker and Prinz 2000). Cornell et al. (1987a, b) notes that a typology based on the circumstances surrounding the offense and the characteristics of the adolescent at the time of the offense would be most useful for both clinical and legal purposes (Cornell et al. 1987a, b; Shumaker and Prinz 2000).

Cornell's typology was developed using a sample of 72 adolescents charged with murder in Michigan (Cornell et al. 1987a, b); his findings were supported by a second study of 71 adolescents convicted of murder in Virginia (Cornell 1990) and again replicated by an independent researcher (Toupin 1993) using a sample of 63 juvenile homicide offenders in Canada (Cornell and Malone 2017). In the original study, Cornell et al. (1987a, b) assessed 72 juveniles charged with murder and a control group of 35 juveniles charged with larceny, both of which were referred for pretrial evaluations. The study looked at the following eight composite variables for both groups: family dysfunction, childhood problems, criminal activity, psychiatric history, school adjustment, violence history, substance abuse, and stressful life events prior to the offense (Cornell et al. 1987a, b; Heide 2003). Based on the information related to the offense, JHOs were assigned to one of three subgroups: (a) crime (51%), (b) conflict (42%), and (c) psychotic (7%). Moreover, analyses revealed differences between the three subgroups on several variables, which are discussed in detail in the following paragraphs (Cornell et al. 1987a, b; Heide 2003). Interestingly, only a few homicide offenders were classified as psychotic at the time of the offense, which is consistent with the research suggesting that psychotic symptoms in juvenile homicide offenders is not as common as some may think (Busch et al. 1990; Cornell et al. 1987a, b; Ewing 1990; Heide 2003; Shumaker and Prinz 2000; Zagar et al. 1990).

Based on this research, Cornell's proposed typologycategorizes JHOs into three groups or pathways based on the circumstances of the offense: (a) *psychotic* (offenders who presented clear psychotic symptoms at the time of the offense, i.e., hallucinations, delusions), (b) *conflict* (nonpsychotic individuals who were engaged in some sort of ongoing conflict with the victim), and (c) *crime* [nonpsychotic individuals who commit homicide in the course of committing some other criminal activity, i.e., robbery (Cornell and Malone 2017; Heide 2003; Shumaker and Prinz 2000)]. As mentioned, offenders from these three pathways differ in the circumstances of their offense as well as their prior adjustment (Cornell and Malone 2017).

The most common pathway in Cornell's typology is the crime-motivated pathway. Crime-related homicides can be described as acts of proactive aggression carried out for instrumental purposes. For instance, when a murder takes place during the commission of a robbery. Given the circumstances of these offenses, JHOs in this group are more likely to murder strangers, flee the crime scene, have an accomplice, and be intoxicated at the time of the offense (Cornell et al. 1987a, b; Shumaker and Prinz 2000). These offenders tend to have a significant history of prior delinquent activity and substance abuse starting at an early age. They often have a history of poor school adjustment, although show a lower frequency of stressful life events prior to the offense when compared to the conflict group (Cornell et al. 1987a, b; Cornell and Malone 2017; Shumaker and Prinz 2000). When considering psychological test

scores, offenders in this group showed greater levels of psychopathology on the Minnesota Multiphasic Personality Inventory (MMPI) compared to offenders in the conflict group, particularly regarding elevations on scales F, 1 (somatic concerns or general physical competence), 3 (hysterical reactions to stress situations), and 8 (disturbances of thinking, mood, and behavior) (Cornell and Malone 2017; Heide 2003). When looking at Rorschach protocols of offenders in this pathway, Cornell and Malone (2017) note it is common to see a low level of object relations or interpersonal maturity in their responses. In other words, they often have interpersonal deficits and related difficulty in relationships. Further, their Rorschach responses suggest they are more likely to dehumanize other people, respond violently when frustrated, and have more severe developmental deficits (Heide 2003).

In contrast, conflict-related homicide involves reactive aggression and is motivated by hostility; victims of these homicides are typically family members or friends of the JHO (Cornell et al. 1987a, b; Cornell and Malone 2017). JHOs in this group are more likely to act alone, use a weapon (typically a gun), and get caught at the scene of the crime (Cornell et al. 1987a, b; Shumaker and Prinz 2000). These individuals are less likely to have a history of criminal activity and prior substance abuse and they often adjusted adequately to school. Socially, they are often described as shy or introverted, and the homicide may be an unexpected and surprising act of violence that seems out of character for them (Cornell et al. 1987a, b; Cornell and Malone 2017; Heide 2003). Distinctive subgroups have emerged within the conflict pathway as well, between JHOs who murder their parents and those who murder other, non-family victims, which will be described in more detail later in this chapter.

In an attempt to improve the Cornell typology, Myers et al. (1995) examined a classification system based on the FBI Crime Classification Manual (CCM) with the reasoning that the CCM provided standard terminology for the classification of murder and included several categories of offense types, thereby allowing for a more precise classification of offenders (Shumaker and Prinz 2000). The CCM consists of four major categories including (a) *criminal enterprise*, (b) *personal cause*, (c) *sexual homicide*, and (d) *group cause*. Of note, all 25 subjects fell into the criminal enterprise (36%) or personal cause (64%) categories. Like Cornell's typology, the majority of JHOs in the criminal enterprise category committed murder during the commission of another crime (Myers et al. 1995; Shumaker and Prinz 2000). Overall, both Cornell and Myers demonstrated that JHOs could easily be classified within a framework based on characteristics of the offense, with roughly half falling into homicides committed during the commission of another crime and half related to some sort of interpersonal conflict.

2.3 Classification Based on the Victim-Offender Relationship

An additional classification system worth discussing is an approach based on distinguishing familial and non-familial homicide. There are a multitude of etiological and prognostic differences between children who murder a parent or immediate family member with other JHOs. Although the conflict-group of Cornell's typology encompasses these familial and non-familial homicides, it does not expand upon how these two groups are distinct.

2.3.1 Parricide

Parricide is defined as the killing of a parent or close relative and is commonly associated with a long history of abuse by the victim (Cornell and Malone 2017). Parricide is rare, comprising only 2% of all homicide cases in the United States (Fegadel and Heide 2016). It can be classified as a subgroup of the conflict pathway and has distinct features from other types of homicide (Cornell and Malone 2017). Corder et al. (1976) compared personality, environmental, and familial characteristics of 10 youth charged with parricide to 10 youth charged with murdering a non-parent relative or close acquaintance to 10 youth charged with murdering a stranger. While a history of family disorganization characterized by marital conflict, economic insecurity, parental brutality, and a lack of social or community ties were characteristic of all homicide offenders, parricide offenders were more socially isolated and had fewer instances of aggressive behavior or impulsivity (Corder et al. 1976; Shumaker and Prinz 2000).

Of note, parricide offenders typically grow up in homes where both child abuse and spousal abuse are common as well as parental chemical dependency (Heide 2003). Moreover, the literature suggests that parricide offenders have often been physically abused (Corder et al. 1976; Duncan and Duncan 1971; Heide 1992, 1994, 2003). However, according to Cornell and Malone (2017), extensive physical abuse does not necessarily have to be present in these cases, as many of these children have experienced prolonged emotional abuse, which is said to manifest as a deep resentment towards the abuser. Research conducted by Heide (1992) demonstrated that children who committed parricide fit into a profile referred to as the "situationally trapped kid" typology of offender. This profile was characterized by a history of severe abuse, an extreme sense of desperation, and a generally passive approach to life (Heide 1992; Shumaker and Prinz 2000). This profile is not surprising given what is known about the negative effects of any type of prolonged abuse on a child (Collishaw et al. 2007; Cook et al. 2005; Lacoviello and Charney 2014; Poole et al. 2017).

Parricide offenders can be viewed as a unique subcategory of JHOs, with many distinctions from other JHOs. Despite these differences, there are many overlapping

risk factors amongst all JHOs, with some being more prominent depending on the type of offense, as discussed. Overall, each of these three major classification efforts are useful in informing researchers or clinicians about possible ways to classify and conceptualize any one juvenile homicide offender, given the circumstances of the crime, their relationship to the victim, or any psychological factors that may be present.

2.4 Less Common Classifications of Homicidal Youth

Most of the research on the topic of JHOs has focused on male adolescents given that they comprise the majority of JHOs. Therefore, much of what has been reviewed thus far relates specifically to that population. Less common, however, are female homicide offendersand young offenders below the age of 13, both of which have unique characteristics common to these offenses and offenders. Moreover, JHOs involved in school shootings or mass murder can also be characterized as a distinct subset of JHOs. Although less common, these subgroups of JHOs are important to discuss as they have their own unique factors associated with the offenses. An understanding of these aspects is important in informing treatment and prevention best suited for that population's needs.

2.4.1 Young Offenders

When discussing young homicide offenders or "child" homicide offenders, researchers vary on the age range that constitutes this group. The general consensus, however, appears to be between ages 0–13/14 years (pre-adolescent years). According to OJJDP, in 2015 about 9% of juvenile homicide offenders were under 15 years old, while 79% were ages 16 or 17 (OJJDP 2016). Child murderers aged 0–14 are rare, representing less than 1% of all homicide perpetrators in the U.S. (Hemenway and Solnick 2017). National arrest statistics from the FBI suggest that in 2013 only 14 children under the age of 13 were arrested for murder, with only three being under the age of nine (Cornell and Malone 2017; FBI 2014). Given the low incidence, there has been little data on this subgroup of JHOs. However, some researchers have investigated the effects of age on juvenile homicide offending.

Shumaker and Prinz (2000) compared the behavioral, psychiatric, and familial predispositions of preteens who either committed homicide or homicidally aggressive acts with adolescents who also committed either homicide or homicidally aggressive acts. Both age groups had a high prevalence of similar risk factors, with an especially high level of physical/emotional abuse and instability in their living environments (Shumaker and Prinz 2000). Key differences were noted as well; preteens had a much higher rate of engaging in cruel behavior towards other children and were significantly more likely to have a negative relationship with their male caretaker

(Shumaker and Prinz 2000). Shumaker and Prinz (2000) conclude that there were more similarities than differences in the developmental backgrounds of these youth; they suggest that given the limited cognitive and physical abilities in preteens, it may be the amount, combination, or intensity of risk factors that pushes them to their threshold.

In more recent studies, Hemenway and Solnick (2017) used data from 16 states reporting to the National Violent Death Reporting System (NVSRS) on homicide perpetrators aged 0-14 to create an appropriate categorization system for this age group. Hemenway and Sonick's categories include: (a) *the caretaker*: this is when the child is put in charge of another child (typically an infant) and kills the child with blunt force. JHOs in this category typically never use a gun and the murder usually occurs within a residence; (b) *the killing of an adult family member*: this family member is typically a parent or grandparent of the JHO. As with the previous category, these murders typically take place within a residence. With these types of murders, the child typically uses a gun or knife as a weapon; (c) *impulsive shooting during play*. The remaining two categories (d and e) *involve homicides during the commission of another crime*. It is noted that JHOs in these instances are rarely committing the crime alone and are often gang-related in nature (Hemenway and Solnick 2017).

Other researchers have suggested that a main difference between young child murderers and adolescent murderers is that children younger than nine who kill typically cannot understand the finality of death (Cornell 1989; Cornell and Malone 2017; Heide 1999). Their actions tend to be an impulsive response to anger without understanding the grave consequences of their behavior, i.e., death (Cornell and Malone 2017; Heide 1999). These children usually kill a younger child in the course of an argument which escalates into a fatal act of violence (Cornell and Malone 2017). Moreover, young children who murder tend to have more severe conflict and mental illness than their adolescent counterparts (Heide 1999).

2.4.2 Female Juvenile Homicide Offenders

FemaleJHOs are another subtype of JHOs with unique characteristics. According to the FBI reports, female juveniles commit fewer than 1% of violent crimes and homicides (Cornell and Malone 2017; FBI 2014). The literature suggests differences in male and female JHOs in terms of their victims, weapons used, and circumstances of the killing. For example, female JHOs are more likely to kill a family member or someone known to them, such as an intimate partner, while male JHOs are more likely to kill strangers (Cornell and Malone 2017; Heide 1999; Heide et al. 2012; Loper and Cornell 1996; Rowley et al. 1987; Snyder and Sickmund 1999, 2006). Additionally, girls are more likely to kill female victims and younger children than their male counterparts (Cornell and Malone 2017; Heide et al. 2012; Loper and Cornell 1996; Snyder and Sickmund 2006). With respect to weapons, girls are more likely to use knives and other weapons, whereas males are more likely to use a firearm (Cornell

and Malone 2017; Heide et al. 2012; Loper and Cornell 1996; Roe-Sepowitz 2009; Snyder and Sickmund 1999, 2006). When discussing circumstances of the killing, Loper and Cornell (1996) used Cornell's typology to demonstrate that expressive and instrumental motives would vary by the gender of JHOs. Their results indicated that almost 80% of murders by female JHOs were conflict-related, while only 21% were crime-related. In contrast, 57% of murders by male JHOs were crime-related (Heide et al. 2012; Loper and Cornell 1996).

Heide and colleagues (2012) built upon previous research to discern whether characteristics of the offenders, victims, weapons, and circumstances differed by offender gender. They examined more than 40,000 murders committed by male and female JHOs over a 30-year period (from 1996 to 2005) using data from the Supplementary Homicide Report (SHR) database. Heide et al. (2012) found that females were significantly more likely than males to have female victims, younger victims, and victims that they knew (family members, intimate partners, offspring). Female JHOs were more likely to use knives and other weapons to kill in conflict situations (Heide et al. 2012). These major findings were consistent with those from prior studies discussed above.

2.4.3 Adolescent School Shooters

School shooters have received ample attention from the media over the last several years, creating an impression of increased numbers of mass shootings in the school setting. However, current statistics prove that school shootings remain relatively uncommon (Gerard et al. 2016; Poland and Conte 2017; US Secret Services and US Department of Education 2004). Despite this, mass murders are tragic incidents that evoke a significant sense of fear in the community. It is important to mention that adolescent school shooters are a unique subset with many differences from other JHOs that have been discussed thus far. While there is no profile or set of risk factors specific to school shooters, certain characteristics common to many of these perpetrators have been identified (Table 2.1).

School shooters are typically white males (Gerard et al. 2016; Meloy et al. 2001; Poland and Conte 2017; US Secret Services and US Department of Education 2004; Vossekuil et al. 2002); a stark contrast to the high rates of African American males across other juvenile homicide offenses. Family backgrounds tend to vary for school shooters. Vossekuil and colleagues (2002) studied 41 offenders who were responsible for 37 incidents of school shootings and found that 44% of their sample lived with both biological parents. Other research suggests that these offenders tend to have families with little supervision and low emotional closeness (Gerard et al. 2016). Of note, while there may be little supervision at home, there does not appear to be the same adverse family environment present in active shooters as is common in other JHOs (i.e., violence and abuse).

School shooters are often described as "loners" and the majority have a history of being bullied (Cornell and Malone 2017; Gerard et al. 2016; Meloy et al. 2001;

Poland and Conte 2017). They often have a preoccupation with violence, although most offenders have no history of violence prior to the school shooting incident (Gerard et al. 2016; Meloy et al. 2001; Poland and Conte 2017; Vossekuil et al. 2002). Many of these offenders have a history of depression and suicidal ideation or attempts (Gerard et al. 2016; Meloy et al. 2001; Poland and Conte 2017). In their study, Vossekuil and colleagues (2002) found that 61% of offenders in their sample had a history of depression and 78% had some form of suicidal ideation or attempts prior to the incident. Like other types of JHOs, much of the research suggests that most school shooters rarely have psychotic features, even at the time of the incident (Gerard et al. 2016; Meloy et al. 2001).

School shooting incidents are rarely impulsive; rather, they are carefully planned out by the offender (Meloy et al. 2002; Gerard et al. 2016; Vossekuil et al. 2002). This can be evidenced by these offenders commonly making threats or writing notes or diary entries, revealing their violent intentions or preoccupation with violent fantasies, as suggested by Meloy et al. (2002). There are many cases where these offenders have mentioned their violent plans to at least one person (Cornell and Malone 2017; Gerard et al. 2016). For instance, Vossekuil et al. (2002) found that 81% of school shooters in their sample had told someone what they were planning to do. Additionally, a large majority of school shooters experienced some sort of triggering event just prior to the incident that was perceived as a major loss, rejection, or frustration by the perpetrator (Cornell and Malone 2017; Gerard et al. 2016; Meloy et al. 2001; Poland and Conte 2017; Vossekuil et al. 2002).

Table 2.1 Classification Systems of Juvenile Homicide Offenders

Classification Based on Psychiatric/Psychological Concepts	
Early descriptions of the "Prototypical JHO"	Lack empathy
	Do not suffer from apparent psychosis
	Murdered either in a calculated manner or a fit or rage
	Biological predisposition for violent and aggressive behavior
DSM-5 Classification	High incidents of Conduct Disorder, ADHD, and personality disorders
	Poly-substance abuse, depression, anxiety, and enuresis are common
	Psychotic Disorders are rare
Classification Based on Specific Characteristics of the Crime	
Cornell's Typology	
Psychotic pathway	Offenders who presented clear psychotic symptoms at the time of the offense, i.e., hallucinations, delusions
	Rarest pathway

(continued)

Table 2.1 (continued)

Conflict-related pathway	Nonpsychotic individuals who were engaged in some sort of ongoing conflict with the victim
	Victims are typically family members or friends
	More likely to act alone, use a weapon (usually a gun), and get caught at the scene of the murder
	Less likely to have a history of criminal activity and prior substance abuse
	Often have an adequate adjustment to school
	Socially, described as shy or introverted
	Homicide may be an unexpected and surprising act that seems out of character
Crime-related pathway	Nonpsychotic individuals who commit homicide in the course of committing some other criminal activity, i.e., robbery
	Most common pathway
	More likely to murder strangers, flee the crime scene, have an accomplice, and be intoxicated at the time of the offense
	Tend to have a significant history of prior delinquent activity and substance abuse starting at an early age
	Often have a history of poor school adjustment
	Lower frequency of stressful life events (compared to conflict group)
Less Common Classifications of Homicidal Youth	
Young offenders	Rare; <1% of homicides in US
	Especially high levels of emotional/physical abuse and instability in the home
	Cruel behavior towards other children
	Negative relationship with male caretaker
	Many similarities in their developmental backgrounds to older JHOs
	Children <9 years old don't understand finality of death
	Usually kill a younger child in the course of an argument
	Actions tend to be impulsive response to anger without understanding the consequences
(a) *The caretaker*	When the child is put in charge of another child (typically an infant) and kills with blunt force
	JHOs in this category typically never use a gun
	Murder usually occurs within a residence
(b) *The killing of an adult family member*	The victim is usually a parent or grandparent of the JHO
	Offense typically occurs within a residence
	Weapon is usually a gun or knife

(continued)

Table 2.1 (continued)

(c) *Impulsive shooting during play*	Accidental
(d and e) *Homicide during commission of another crime*	Rarely committing the crime alone
	Often gang-related in nature
Female offenders	Rare; <1% of homicides in US
	More likely to kill family member or someone known (i.e., intimate partner)
	More likely to have female victims and younger children
	Knives are common weapons
	Conflict-related murder
School shooters	White males
	Family backgrounds vary
	Families with little supervision and low emotional closeness
	Less adverse family environment than other JHOs
	Described as "loners"
	History of being bullied
	Preoccupation with violence but no violent histories
	History of depression and suicidal ideation/attempts
	Rarely psychotic, even at the time of the incident
	Shootings are rarely impulsive; carefully planned by shooter
	Often make threats or write detailed notes about their violent intentions/fantasies
	Typically mention their plan to at least one person
	Often experience a triggering event just prior to the incident perceived as a major loss/rejection/frustration to the perpetrator

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Chapter 3
Predictors of Juvenile Homicide

Understanding the risk factors associated with juvenile homicide is paramount to the prevention of violence. Several studies have examined a multitude of variables to understand significant factors that may contribute to future violent behavior (Ahonen et al. 2015; DiCataldo and Everett 2008; Heide 2003; Myers et al. 1995; Shumaker and Prinz 2000). This has allowed us to better understand which risk factors are closely associated with this population. Importantly, the evidence suggests that a constellation of risk factors is more important when predicting future violence as opposed to any single risk factor (Ahonen et al. 2015; Appleyard et al. 2005; O'Dougherty-Wright et al. 2013). Not surprisingly, juvenile offenders experience significantly more risk factors and are much less likely to be exposed to protective factors when compared to the general population (Kennedy et al. 2018). This knowledge has informed intervention and prevention programs for at-risk youth, with a focus on promoting protective factors (Dotteweich 2006; Taylor et al. 2017; Zimmerman et al. 2013). While this is helpful, it is also important to understand whether juvenile homicide offenders differ in any meaningful way from other juvenile offenders. Understanding predictive factors specific to juvenile homicide is important for the prevention and treatment of this population. Many risk factors across several domains have been identified to be associated with juvenile homicide offenders, as discussed below.

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3.1 Individual Factors

3.1.1 Psychological, Behavioral, and Mental Characteristics

Several studies have explored the presence of psychopathology in juvenile homicide offenders. Findings suggest that severe psychopathology is relatively rare in this population. While some studies have demonstrated high incidence of psychotic disorders (Bender 1959; Lewis et al. 1988; Rosner et al. 1978; Sendi and Blomgren 1975), most studies demonstrate that JHOs are rarely psychotic (Heide 2003). One study compared 72 JHOs with 71 nonviolent juvenile offenders and found that 0% of JHOs and only 3% of nonviolent juvenile offenders had psychotic symptoms (Busch et al. 1990; Shumaker and Prinz 2000). In a study by Myers et al. (1995), none of the JHOs in their sample met DSM-III-R criteria for a psychotic disorder. However, 71% of those JHOs had a history of psychotic symptoms, including paranoid ideation (67%), delusional thinking (10%), auditory hallucinations (29%), gustatory hallucination (5%), and derealization (5%) (Myers et al. 1995; Shumaker and Prinz 2000). Given this discrepancy, Myers et al. (1995) suggested that JHOs may have psychotic features that do not reach diagnostic threshold for psychosis (Shumaker and Prinz 2000).

Importantly, many studies have found a high incidence of Conduct Disorder (Cornell et al. 1987a, b; Lewis et al. 1983; Malmquist 1996; Myers 1994; Myers and Kemph 1988, 1990; Myers et al. 1995; Petti and Davidman 1981; Rosner et al. 1978; Shumaker and Prinz 2000; Scott 1999; Yates et al. 1984) and ADHD (Myers et al. 1995; Lyman 1996; Shumaker and Prinz 2000) in JHOs. Overall, conduct disorder, personality disorders, and ADHD rank among the highest for JHOs, in addition to poly-substance abuse, depression, anxiety, and enuresis (Heide 2003; Shumaker and Prinz 2000). Not surprisingly, many JHOs have been found to demonstrate problematic behaviors prior to the homicide. For instance, they commonly engage in delinquent behavior and often have prior arrests or offense histories (Heide 2003). They often do not attend school regularly, for a variety of reasons, including truancy, dropping out, getting suspended, etc. (Heide 2003). These behavioral problems are not surprising given the high rates of ADHD and conduct disorder among JHOs. Myers et al. (1995) classified JHOs using the FBI crime classification manual and found 10 common characteristics among young killers, including previous violent acts towards others, disruptive behavior disorders, and previous arrests (Heide 2003). Loeber et al. (2005) also identified delinquency, school suspension, and prior behavioral problems as risk factors. Similarly, Farrington et al. (2012) found that having a disruptive behavioral disorder, serious delinquency, peer delinquency, cruelty towards people, school suspension, truancy, having a positive attitude towards delinquency and drugs, and covert behaviors significantly increased the odds of a homicide conviction (Delisi et al. 2014).

3.1.2 Cognitive

Findings on cognitive impairment in JHOs vary. That is, many studies have found significant cognitive impairment in JHOs (Busch et al. 1990; Lewis et al. 1985, 1988; Zagar et al. 1990), while other studies have found low rates of cognitive impairment (Petti and Davidman 1981; Russell 1986; Walshe-Brennan 1977). Similarly, there are mixed results regarding intelligence and intellectual disability (Heide 2003; Shumaker and Prinz 2000). While IQ varies in JHOs, most studies agree that JHOs rarely have an intellectual disability (Heide 2003). Despite IQ level, there is a high incidence of learning disabilities and educational problems among JHOs (Heide 2003; Shumaker and Prinz 2000). Many JHOs have attentional and learning difficulties, which is not surprising given the high rates of ADHD in this population (Cornell and Malone 2017). According to Cornell and Malone (2017), verbal discrepancies on intelligence tests are common in many JHOs and suggest verbal or language-based impairments in this population as well. It is likely that these cognitive and learning difficulties contribute to additional risk factors such as poor school performance, poor social skills, and difficulty resolving interpersonal conflict, which may directly or indirectly increase the risk for violence (Cornell and Malone 2017).

Neurological impairment has also been examined in JHOs. Neurological impairment can include a variety of conditions such as severe head injuries, seizure disorders, deficits on neuropsychological testing, abnormal EEGs, and abnormal head circumferences (Heide 2003; Myers 1992). Many studies have found significant neurological impairment in this population, including head trauma, epilepsy, neuropathy, and abnormal EEGs (Bailey 1996a, b; Bender 1959; Busch et al. 1990; Heide 2003; Lewis et al. 1985, 1988; Myers et al. 1995; Shumaker and Prinz 2000; Zagar et al. 1990). Lewis et al. (1988) compared juvenile homicide offenders with violent juvenile offenders and nonviolent juvenile offenders and found that JHOs were significantly more likely to have neurological impairment than nonviolent juvenile offenders, although there was no significant difference between JHOs and violent offenders. Still, others maintain that neurological impairments are relatively rare in JHOs (Dolan and Smith 2001; Heide 2003; Petti and Davidman 1981; Russell 1986; Shumaker and Prinz 2000; Walshe-Brennan 1975). According to Cornell and Malone (2017), compelling evidence of severe neurological impairment is rare. It is possible that less severe neurological impairments increase the likelihood of aggressive behavior in JHOs; however, it is not a sufficient cause for violence (Cornell and Malone 2017).

3.1.3 Substance Use

Substance use is a common problem among JHOs. According to Heide (2003), the percentage of JHOs reporting substance use has increased over the past 30 years, including those who were under the influence of substances at the time of the offense.

In fact, many studies have found that anywhere between 50-75% of JHOs abused alcohol or drugs (Cornell et al. 1987a, b; Heide 2003; Myers and Kemph 1990; Myers and Scott 1998). Moreover, anywhere between 25–50% of JHOs were intoxicated at the time of the offense (Cornell 1989; Shumaker and Prinz 2000; Sorrells 1977; U.S. Department of Justice 1987). Dicataldo and Everett (2008) compared juvenile homicide offenders to violent juvenile offenders and found that 41% of JHOs in their sample reported using substances at the time of the offense compared to 13.6% of nonhomicide offenders. Moreover, JHOs had a greater dependency on harder drugs when compared to nonviolent juvenile offenders (Heide 2003; Santtila and Haapaslo 1997). In addition to substance use itself, there is evidence to suggest that having a positive attitude towards using substances is also a risk factor (Farrington et al. 2012; Loeber et al. 2005).

3.2 Home Environment/Family Factors

The literature on juvenile homicide consistently agrees that the majority of JHOs come from adverse family backgrounds (Busch et al. 1990; Heide 2003; Lewis et al. 1988; Shumaker and Prinz 2000). Many come from criminally violent families, where domestic violence, parental alcoholism, mental illness, and other indicators of psychopathology are common (Busch et al. 1990; Heide 2003; Lewis et al. 1988). Additionally, child abuse and maltreatment are common in their homes (Heide 2003). Shumaker and Prinz (2000) reviewed 18 studies on JHOs since 1974 and found eight adverse familial factors that commonly emerged in their histories: physical abuse; sexual abuse; instability of caretaker situation/residence; father's absence; parental alcohol/drug abuse; parental psychiatric history; parental criminal background; and violence in the home. Loeber and Farrington (2011) identified specific risk factors that separately and collectively predicted later violence and homicide in a sample of urban male youth (Ahonen et al. 2015). Of those factors they identified, family factors included coming from a broken family, having a family on welfare, and having a young mother (Ahonen et al. 2015; Loeber and Farrington 2011). Ahonen et al. (2015) expanded on the previous study and found that physical abuse, bad relationships between child and caretaker, and poor supervision were among the strongest family factors that predicted juvenile homicide.

It has been suggested that households characterized by violence and abuse may fail to provide the child with appropriate nurturance and socialization from caregivers, which over time may cause the child to seek out gratification and act aggressively when frustrated (Corder et al. 1976; Shumaker and Prinz 2000). Additionally, constant witnessing of violence will likely have a normalizing effect on the child and may result in modeling of violent behavior (Shumaker and Prinz 2000). The overwhelming evidence that exposure to childhood adversity and abuse significantly predicts later violence and homicide glaringly highlights the need for prevention targeting the reduction of these adverse childhood experiences (ACEs) (Baglivio and Wolff 2017).

3.3 Community Factors

3.3.1 Gun Availability

Guns are commonly cited as a significant risk factor for juvenile homicide (Ahonen et al. 2015; Busch et al. 1990; Cornell and Malone 2017; DeLisi et al. 2014; Gerard et al. 2014; Heide 1997; Loeber et al. 2005; Loeber and Farrington 2011; Shumaker and Prinz 2000). Guns tend to be the most commonly used weapon, with 81% of male JHOs and 41% of female JHOs using a gun in the commission of the homicide (Shumaker and Prinz 2000). The increase in juvenile homicide from 1984 to 1991 was almost entirely an increase in death by firearms and has been attributed to the handgun production during that time (Cornell and Malone 2017; Heide 1997). Heide (1997) reported that most young inner-city homicide offenders she evaluated carried guns and were prepared to use them. Further, gun accessibility is common among these offenders. Many JHOs report that guns are cheap and easy to access in their neighborhoods (Heide 1997). DeLisi et al. (2014) found a higher prevalence of gun carrying among JHOs than nonhomicide juvenile offenders. DiCataldo and Everett (2008) examined the differences among JHOs and violent juvenile offenders and found that although both groups agreed it was easy to obtain guns in their community, JHOs had greater access to guns in their home and were more likely to take guns from their home and use them during the offense. Specifically, 25.1% of homicide participants reported having guns routinely kept in their home as compared to 5.7% of nonhomicide participants. Further, 67.7% of JHOs in their sample committed their offenses with guns as opposed to 21.1% of the nonhomicide offenders (DiCataldo and Everett 2008).

Given the significance of guns in juvenile homicide, Cornell (1993) argues for at least six circumstances in which access to handguns places youth at an increased risk for homicidal behavior: (a) criminally motivated children will graduate to higher crimes over time. Access to a firearm may allow them to more easily engage in these higher-level crimes; (b) youth in gangs carrying guns may escalate conflict into a shooting war; (c) adult criminals make children carry guns so they will not face criminal charges if confronted by a police officer. During these situations, the child may feel compelled to use the gun to prove his or her prowess to the adult during the commission of a crime; (d) victims of abuse retaliate after arming themselves with a gun. As mentioned, a significant amount of JHOs have a history of abuse and often times, particularly with parricide offenders, commit homicide as a form of escape from the abuse; (e) youth may carry a gun as a form of status; however, during the course of a disagreement, uses the weapon; and (f) an emotionally disordered child could readily use the gun while reacting to an argument (Shumaker and Prinz 2000).

3.3.2 Gang Activity

Gang activity is another commonly cited risk factor among JHOs (Ahonen et al. 2015; Busch et al. 1990; Cornell and Malone 2017; DeLisi et al. 2014; Gerard et al. 2014; Loeber et al. 2005; Loeber and Farrington 2011; Shumaker and Prinz 2000). Gang members are more likely to carry guns and be involved in a range of illegal activities, which increases the risk of juvenile homicide even more (Shumaker and Prinz 2000). As previously discussed, having a gun is a significant risk factor. Moreover, according to Cornell's typologies, many juvenile homicides occurs during the commission of another crime (Cornell et al. 1987a, b). Thus, it is not surprising that gang involvement would increase the risk of juvenile homicide significantly. According to the FBI's Uniform Crime Reporting (UCR) Program, 381 (~40%) of homicides by youth in 2017 were classified as "juvenile gang killings (Federal Bureau of Investigation 2017). Gerard et al. (2014) suggests that gang membership is likely a significant risk factor for juvenile homicide because those individuals are exposed to situations, activities, or belief systems that often result in violence.

3.3.3 Disadvantaged Neighborhoods

Environmental and socioeconomic factors such as low SES and living in a disadvantaged neighborhood are well documented risk factors among JHOs (Ahonen et al. 2015; Gerard et al. 2014; Heide 1997; Loeber and Farrington 2011). In disadvantaged neighborhoods, particularly inner-city neighborhoods, children are exposed to a considerable amount of violence (Heide 1997). Bell (1994) surveyed 203 African American youth attending a public high school in an inner-city Chicago community that consistently had one of the highest homicide rates. Among those youth, 43% reported seeing a killing, 59% reported someone close to them being killed, 61% had witnessed a shooting, 66% knew someone who was close to them had been shot, and 48% had been shot at themselves (Bell 1994; Heide 1997). Growing up in a violent community is known to be a risk factor for delinquency in general (Kennedy et al. 2018). However, some studies have found that youth charged with murder had greater exposure to violence and perceived greater neighborhood disorder than nonhomicide juvenile offenders (DeLisi et al. 2014; Loeber et al. 2005). It has been suggested that these environmental and socioeconomic risk factors are the reason that a disproportionate amount of African American males are juvenile homicide offenders, as they are more frequently exposed to violent neighborhoods and low SES (Loeber and Farrington 2011).

3.3.4 Media Portrayal of Violence

Although the exact link between exposure to violent media and later violent criminal behavior is unclear, there has been some evidence that suggests violent media

increases violent behavior in children (Anderson et al. 2010; Cornell and Malone 2017; Heide 1997; Huesmann 2007; Shumaker and Prinz 2000). A study by the American Psychological Association suggested that children who watched two to four hours of violent television daily would have witnessed 8,000 murders and 100,000 other acts of violence before completing elementary school (Heide 1997). Of note, these findings were from the early 1990's, so one could only expect that these numbers have increased given the advances in technology and greater accessibility to programs that we have today. Although there is evidence from laboratory experiments and observational field studies demonstrating that exposure to violent television and video games increases a child's risk to engage in aggressive behavior and demonstrate more aggression over time (Anderson et al. 2010; Cornell and Malone 2017; Huesmann 2007), the role of media violence on juvenile homicide is still debated.

Some argue that many youths are exposed to large amounts of media violence, but only a small portion commit homicide (Shumaker and Prinz 2000). While the exposure to violent television itself may not have a substantial impact on future violent behavior, this factor may have a contributory and interactional effect on youth who have been exposed to a range of other risk factors (i.e., cognitive deficits, abuse and violence in the home, emotional problems, etc.) (Shumaker and Prinz 2000). Children who are raised in dysfunctional homes where violence and aggressive behavior is normalized may be at an even greater risk (Cornell and Malone 2017). In fact, Fikkers et al. (2013) found that adolescents reared in high conflict families were more likely to demonstrate aggression when exposed to high levels of violent media than adolescents who came from a more positive home environment (Cornell and Malone 2017). There are several ways in which exposure to media violence can increase aggression and violent behavior. Mechanisms such as desensitization to violence, lack of empathy towards other, role modeling violent behavior, increased expectations of violence from others, and the development of internalized cognitive scripts that influence decision making during social conflicts, can all result from exposure to violent media and may influence violent behavior (Cornell and Malone 2017). Not surprisingly, these mechanisms are similar to the impact of witnessing violence in the real world. Considering this, it is possible that exposure to media violence is an environmental risk factor that operates in a manner akin to witnessing violence or physical abuse (Shumaker and Prinz 2000).

3.4 Differentiating Juvenile Homicide Offenders from Other Juvenile Offenders

An important point to consider for the prevention of violence, is whether specific risk factors are more predictive of juvenile homicide than other types of juvenile delinquency. Many of the risk factors found to be associated with juvenile homicide are similar to those risk factors that have been identified with juvenile delinquency

in general. For example, some of the common risk factors known to increase the likelihood of delinquency include a poor self-concept and low self-esteem, substance use, low academic achievement, and association with deviant peers (Kennedy et al. 2018, 2011). Researchers have looked at whether juvenile homicide offenders differ from nonhomicide juvenile offenders in any meaningful way. Most findings suggest that predictors of juvenile homicide offenders do not differ significantly from violent juvenile offenders, with respect to a few factors described below.

Ahonen et al. (2015) used longitudinal data collected as part of the Pittsburgh Youth Study (PYS) to expand upon previous longitudinal studies (Loeber et al. 2005; Loeber and Farrington 2011) that reveiwed the early lives of juvenile homicide offenders. They examined nonviolent offenders, violent offenders, and homicide offenders to determine which factors distinguish JHOs from other violent offenders (Ahonen et al. 2015). They first looked at predictors of any violent offender and found that 23 factors significantly discriminated between all violent offenders and nonviolent offenders, in addition to all three control variables (race, low SES, prior convictions of violent crimes). Predictors were found across all major risk domains, i.e., child behavior, family factors, peer factors, school factors, including: covert behavior, physical aggression, running away from home, psychopathy/callous-unemotional traits, high risk score at screening, hyperactivity-attentional-impulsivity problems, cruelty to people, gang fighting, positive attitude towards delinquency, gun selling at a young age, low school motivation, low academic achievement, bad peers, peer delinquency, bad relationship with peers, physical abuse, bad relationships between child and caretaker, poor supervision, physical punishment by caretaker, boys counter control when disciplined, and high parental stress (Ahonen et al. 2015). Importantly, there were only a few predictors that discriminated JHOs from violent offenders: More of the JHOs were African American, scored higher at the initial risk screening (conduct problems), and had a positive attitude towards substance use (Ahonen et al. 2015).

Another study compared 33 JHOs with 38 violent juvenile offenders across a variety of variables and found that nonhomicide participants were more problematic on many of the variables of analysis (DiCataldo and Everett 2008). Nonhomicide offenders often began their delinquent careers earlier, had significantly greater number of total offenses, and had more violent offenses (DiCataldo and Everett 2008). Regarding family variables, nonhomicide participants often had less stable early childhood histories with more frequent placements out of the home and more frequent sibling delinquency. Nonhomicide offenders also reported a greater number of anger problems, less frequent positive memories of their parents, and were more likely to endorse a belief that others were jealous of them (DiCataldo and Everett 2008). The homicide participants were only distinguishable in two key factors: (a) they endorsed greater availability to guns in their homes and were more likely to report having taken guns from the home in the past; and (b) they reported a greater incidence of substance abuse at the time of the offense (DiCataldo and Everett 2008).

Baglivio and Wolff (2017) looked at temperament differences among subgroups of violent juveniles who committed homicide, violent sexual, and violent offenses. Specifically they looked at (a) effortful control, defined as the ability to self-regulate

and control emotions and desires, and (b) negative emotionality, defined as a tendency to interact with individuals and experiences in a negative way and interprets the actions and intentions of others as hostile (Baglivio and Wolff 2017). Interestingly, they found that homicide offenders, along with non-sexual violent offenders had greater negative emotionality, suggesting that they are more likely to perceive negative interactions and experiences regularly (Baglivio and Wolff 2017). On the other hand, juvenile homicide offenders and violent sexual offenders demonstrated higher effortful control, indicating a greater ability to self-regulate their behavior (Baglivio and Wolff 2017). This study yields important implications for targeted treatment based on the type of offender. For instance, treatment of homicide offenders may benefit from cognitive behavioral interventions that focus on reducing that negative emotionality (Baglivio and Wolff 2017).

Gerard et al. (2014) did an excellent job explaining how many of the identified risk factors among JHOs are linked. In their study, Gerard et al. (2014) systematically explored and synthesized the current knowledge on JHOs by reviewing studies that draw on high quality study design with the least amount of bias. The 16 studies that were used all compared juvenile homicide offenders to other juvenile offenders, and considered risk factors associated with juvenile homicide in terms of demographic characteristics, gestational factors, illness and injury, developmental factors, psychological disorders, parents and family, individual characteristic, antisocial behavior/delinquency, education, and weapon availability (Gerard et al. 2014). Their review yielded 10 risk factors that are most consistent across the current literature on juvenile homicide: gender (male), low executive functioning, illness, epilepsy, violent family members, criminal family members, contact with the court, low academic achievement, gang/group membership, and weapon possession (Gerard et al. 2014).

Gerald et al. (2014) suggested that the reason JHOs are predominately male is because of the reason they commit the homicide. Consistent with Cornell's typologies, males are more likely to kill during the commission of another crime, whereas females tend to commit homicide during interpersonal conflict. According to Gerald et al. (2014), low executive functioning among JHOs could be related to several other identified risk factors. As mentioned, JHOs tend to come from impoverished/violent families and neighborhoods. Poor executive functioning could be the result of poor parental involvement, given that children tend to learn healthy decision making through interactions with parents (Gerard et al. 2014). Many JHOs experience neglect, poor care, and treatment, and often have limited financial resources, all of which may contribute to illness (Gerard et al. 2014). Further, abusive and violent parents can lead to heightened aggression and children may absorb and integrate a model of aggression (Gerard et al. 2014). It is not surprising that given the risk factors noted above, juvenile homicide offenders would encounter courts, either because of their parents' actions (i.e., abuse) or their own delinquent behaviors. Moreover, these factors play into low academic achievement, gang membership, and access to weapons, all significant risk factor among JHOs (Gerard et al. 2014).

3.5 Cumulative Risk

As mentioned earlier in this chapter, many studies have found that cumulative risk is far more predictive than any single risk factor. In fact, Ahonen et al. (2015) found that the percentage of violent offenders as a function of their exposure to risk factors, linearly increased from 8.4% at 0 risk factors to 41.3% at 3 risk factors. When exposed to 4 or more risk factors, the percentage of violent offenders accelerated to 61.5% (Ahonen et al. 2015). Risk exposure to multiple risk factors is quite distinctive in violent juvenile offenders as compared to nonviolent juvenile offenders (Ahonen et al. 2015). When comparing the two groups, Ahonen et al. (2015) found that 24% of violent offenders were exposed to 3 risk factors compared to only 9% of nonviolent offenders. Moreover, 12% of violent offenders were exposed to 4 or more risk factors, while only 2% of nonviolent offenders were (Ahonen et al. 2015). This suggests that juveniles exposed to high levels of risk factors, especially across multiple areas, are at an increased risk for both violent offending, including homicide. Similarly, in Gerard et al. (2014) review of studies on JHO risk factors, the authors concluded that risk factors for juvenile homicide are cumulative and evolve through life.

Heide (1997) suggests that for many juvenile homicide offenders, the effects of these factors are cumulative. Her comprehensive theory on juvenile homicide captures broader societal forces that interact with situational forces, resource availability, and personality characteristics (DiCataldo and Everett 2008; Heide 1997). Heide (1997) organized 15 factors that appeared to contribute to the rise of juvenile homicide in the mid 1980s into five categories: (a) situational factors; (b) societal influences; (c) resource availability; (d) personality characteristics; and (e) cumulative effect. The situational factors include things such as child abuse and neglect and the absence of positive male role models (Heide 1997). Societal influences include a lack of positive role models, witnessing violence by those in power, exposure to media violence and violence in the community, and exemplars in a culture in which violence is often glamorized and perceived as enhancing status (Heide 1997). Resource availability includes the accessibility to firearms, drugs and alcohol, and poverty and lack of resources (Heide 1997). Personality characteristics include low self-esteem, the inability to deal with strong feelings, boredom, poor judgement, and prejudice and hatred (Heide 1997). Heide (1997) argued that these situational factors, societal influences, and resource availability interact with personality characteristics making certain youth more likely to engage in violent behavior, including homicide. Similarly, Lewis et al. (1988) noted that that each of these factors may be present, to a greater or lesser extent, in essentially anyone (nonviolent delinquents and nondelinquents), but the combination of serious intrinsic vulnerabilities and an abusive or violent environment is what is associated with the development of violent behavior Table 3.1.

Table 3.1 Juvenile homicide offender risk factors

Individual risk factors	
	High incidents of Conduct Disorder, ADHD, and personality disorders
	Poly-substance abuse, depression, anxiety, and enuresis are common
	Psychotic Disorders are rare
	High incidents of Conduct Disorder, ADHD, and personality disorders
	Poly-substance abuse, depression, anxiety, and enuresis are common
Behavioral problems	Delinquent behavior
	Prior arrests or offense histories
	Poor school attendance (truancy, dropping out, suspension)
	Cruelty and violence towards others
	Delinquent behavior
Cognitive	IQ varies; rarely have an intellectual disability
	High incidence of learning disabilities and educational problems
	Attentional and learning difficulties
	Verbal or language-based impairments
	Cognitive difficulties may contribute to poor school performance
	Neurological impairment (i.e., head trauma, epilepsy, neuropathy, and abnormal EEGs)
	Severe neurological impairment is rare
Substance use	50–75% of JHOs abuse alcohol and drugs
	Positive attitude towards using substances
	Being on a substance at the time of the offense
Home environment/family risk factors	
Adverse home environment	Domestic violence
	Child abuse (physical, sexual) and maltreatment
	Instability of caretaker/residence/situation
	Poor supervision
Family factors	Parental alcoholism/drug use
	Criminally violent families
	Parental psychiatric history
	Coming from a broken family
	Family on welfare
	Young mother
	Absent father
	Bad relationship between child and caretaker

(continued)

Table 3.1 (continued)

Community risk factors	
Guns	Easy access to guns (esp. in guns in the home)
	Most commonly used weapon
Gang involvement	Gang members more likely to carry guns and be involved in a range of illegal activities
Disadvantaged	Inner-city neighborhoods exposed to violence
Neighborhoods	Low SES neighborhoods
Media portrayal of violence	Contributory and interactional effect on youth exposed to a variety of other risk factors (e.g., cognitive deficits, abuse, violent homes)

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Chapter 4
Case Examples

4.1 Introduction

The concept of kids who kill is often described as unfathomable, given the general perception of innocence in children. Case examples provide a brief window into the world of juvenile homicide. Details related to the offender, his or her background, and the criminal behaviors can shed light on the discussed risk factors and common characteristics associated with this population. The authors have identified several cases from diverse sources, including treating clinicians, forensic evaluators, court cases, and related media. Of note, limited case studies of JHOs are available and among those reviewed, inconsistent structure and content was provided. However, the chosen case examples highlight a variety of common factors and provide real life context to the information reviewed thus far.

4.2 Parricide

4.2.1 Dale Whipple

Dale Whipple, a 17-year old youth was charged with two counts of murder after admitting to hacking his parents to death with a double-edged, long handled, rusty axe. His trial revealed a history of adverse childhood experiences, including prolonged emotional and physical abuse at the hands of his parents. Dale and his younger sister, Penny, were reportedly beaten frequently with a "two by four." During his testimony, Dale reported being in extreme pain daily. Reportedly, he made several unsuccessful attempts to seek help in response to the abuse. Relatives, neighbors, and school counselors admitted their knowledge of abuse, citing instances in which Dale's father threatened harm to him and beat him with a paddle. Dale submitted a plea of self-defense, citing the growing severity in the daily abuse , along with

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concerns for his sister's safety. The jury's ruling in Dale's case was a shock to many, given the brutality that Dale endured, charging him as "guilty, but mentally ill." Dale was sentenced to concurrent sentences for the murder of his parents (30 years for the killing of his father and 40 years for the killing of this mother). The Court cited their rejection of his self-defense plea on the basis of his premeditation (he shared this plan with his sister in advance) and efforts to cover up the murders (he ransacked the home, left, and returned, pretending to "discover" his parents' bodies). This decision was affirmed on State Supreme Court appeal, stating that the threat of harm was "too "temporally remote to be 'imminent,'" as required under self-defense (Wyman 1985; Whipple v. Duckworth 1992; Smith 1993; Sacks 1994).

4.2.2 Robert Lee Moody

Robert Lee Moody, a born-again Christian, barely 18 years old, woke up to yet another morning of his mother's head being smashed into a kitchen appliance. He ran to his neighbors to call the police, ignoring death threats from his father. Despite his efforts to get help, his mother refused to press charges, telling Robert "he'll only come back to kill us." Robert then stole his father's shotgun, hid, and fatally shot his father three times. Minutes later, he took his motorcycle to the police station and confessed to the murder, claiming that the voice of God had instructed him to carry out the act, thereby "prevent[ing] more carnage to his family." Robert was charged with first degree murder; he plead temporary insanity and attended a four-day bench trial during which the judge and public learned of the terror that Robert and his family endured under their father's rule. Evidence findings revealed that Robert, his siblings, and his mother were exposed to prolonged and severe physical, emotional, and sexual abuse. Robert's father reportedly forced him to take illegal drugs and watch over 400 pornographic movies. He is said to have raped Robert's sisters, and was physically abusive to his mother, forcing her into prostitution. In turn, the judge reduced the charges to voluntary manslaughter. Ultimately, Robert was deemed sane at the time of the murder and convicted of manslaughter. He was given a four-year suspended prison sentence with five years of probation and an order to spend two years working abroad as a Christian missionary. The judge cited the significant history of abuse as the primary mitigating factor in his decision (United Press International 1984; Smith 1993).

4.3 Female Homicide

4.3.1 Alyssa Bustamante

At the age of 15, Alyssa Bustamante brutally murdered her 9-year old neighbor, stabbing her in the chest multiple times and slitting her throat. She dragged the body to shallow grave she had dug in advance, burying her young neighbor under dirt

and leaves. Alyssa killed for the thrill of it, describing the act as "ahmazing" in her diary. Evidence eventually led police to Alyssa, who confessed to committing the homicide and brought police to the victim's body. She pled not guilty to first degree murder and it was determined she would be tried as an adult. While awaiting trial, she became psychologically distressed, reportedly attempting suicide, resulting in a transfer to a children's psychiatric hospital. Trial testimony about Alyssa's history revealed a childhood marked with numerous risk factors. Her father was absent from her life due to incarceration and her mother was in and out of jail, often committing petty crimes and engaging in substance abuse. At the age of seven, she was sent to live with her grandparents. Her psychological evaluation indicated that she suffered from significant mental health issues, including depression, self-harm (cutting), and recurrent suicidal ideation, inclusive of prior attempts and related hospitalizations. A few weeks into her trial, Alyssa accepted a plea deal to plead guilty to second degree murder; she was then sentenced to life in prison with the possibility of parole (Blanco n.d.; Associated Press 2010; CBS News 2012).

4.3.2 "Sally"

A 16-year old girl, described by her psychiatrist as a "shy, pleasant, self-conscious girl" (Ewing 1990, p. 102), stole her father's pistol and shot her mother and younger sister at the breakfast table. Immediately after, she ran the quarter mile distance to the police station. Sally was unable to recall details of the murders, citing an amnesiac episode. Her psychiatric evaluation revealed a teenager with a significant history of risk factors. Sally was described as having little motivation at school. She endured prolonged bullying at the hands of her peers, reportedly teased for her "odor and nervousness" (Ewing 1990, p. 102) Further, it was reported that Sally was encopretic (resistance of bowel movements, creating impacted stool and leakage) throughout childhood and a bedwetter until the age of 14. Her family unit was described as "socially isolated" (Ewing, p. 102). Additionally, Sally endured significant trauma in the two years prior to the murders; she was sexually abused by her grandfather, who lived next door and reportedly paid her to provide oral sex on a weekly basis. The evaluation ruled out any neurological deficits and presence of psychosis, resulting in a diagnosis of schizotypal disorder. Ultimately, Sally was committed to a state institution for youth until the age of 18, at which point she was released (Ewing 1990).

4.4 Conflict

4.4.1 Jerry Johnson

Jerry Johnson was 17 years old when he and a friend lured two unsuspecting peers into the woods, fatally shooting one, and beating the other, leaving him for dead.

The peer who Jerry murdered, Timmy, was described as his best friend who he had recently come into conflict with over a girl they shared romantic interest in. The boy who was left for dead managed to crawl his way to the highway and was eventually picked up by a motorist and able to reach the police, resulting in Jerry's arrest. Jerry's forensic evaluation painted a picture of a popular teenage boy who did well in school, engaged in extracurricular programs such as ROTC, and had plans for future enrollment in the U.S. Marine Corps. While his relationship with his parents was close at the time of the murder, he reported past estrangement from his father, describing him as an alcoholic who was verbally abusive to his mother up to a few years prior to the evaluation. Jerry's childhood and development was otherwise unremarkable, with no report of prior delinquent behaviors, drug use, or adjustment issues. No cognitive deficits observed or presence of pathology. Of note, Jerry showed little remorse for the murder. The forensic psychologist highlighted the importance of recent interpersonal difficulties with his ex-girlfriend. Just before the murder, Jerry and his girlfriend broke up, to which he blamed Timmy for, suspecting that Timmy was flirting with his girlfriend. "Timmy was betraying our trust—trying to get my girlfriend to go out with him. That broke all the rules right there. […] Pretty soon they were gonna get together and go out. I had to stop that" (Heide 1999, pp. 120–121). While incarcerated in an adult prison and waiting for his trial for first degree murder, Jerry was implicated in a hire for murder plot, in which he had hired a hitman to kill the male peer that he had left for dead. Jerry pled guilty to both first degree murder and solicitation to commit first-degree murder. In a plea deal, he testified against his accomplice in the murder, taking the potential for death penalty off the table. Jerry was sentenced to life in prison with a mandatory 25 years before parole eligibility on the murder charge. Additionally, he was sentenced to 7 years on the solicitation charge and another 5 years after being found guilty for possession of contraband while incarcerated (Heide 1999).

4.5 Crime

4.5.1 Drug Related Homicides

4.5.1.1 Heath Wilkins

Heath Wilkins was a 17-year old teenager who ingested LSD, along with his girlfriend, and stabbed to death a female clerk during a premeditated robbery at a local liquor store. Heath stabbed the woman in the back and three times in the chest. Reportedly, as she plead for mercy, he went on to stab her four times in the throat. Heath's history revealed a childhood marked by abandonment, neglect, and abuse. At age 3, his father, who was reportedly mentally ill, disappeared, leaving Heath with his drug-addicted, physically abusive mother. Growing up, Heath was rarely looked after and became involved with illegal activities at an early age. He began smoking

marijuana at the age of 5 and soon after began setting fires and committing house burglaries. At the age of 10, Heath obtained poison, reportedly trying it first on a dog. He then placed it in emptied capsules of pills and unsuccessfully attempted to give them to his mother and her boyfriend. Upon discovering the poisonous pills, Heath's mother forced him to take them. Soon after, he was committed to mental institution due to his dangerous acts and from there on out he cycled through different institutions, foster homes, and detention facilities until the age of 16. A month prior to the murder, Heath was released to his mother's care, who refused to allow him to live with her. Homeless, and without means to support himself, Heath began to engage in petty thefts with his girlfriend, whom he met in a juvenile detention center. The forensic psychologist who evaluated Heath during his trial described him as having limited ability to manage and control affect, resulting in increased vulnerability to impulsive actions. Further, he stated, "he is intolerant of intense affects such as anxiety, depression or anger, in that such feelings are overwhelming, interfere with his ability to think clearly and give rise to impulsive actions. […] His age co mingles with a profound depressive experience generated by an excruciating sense of lonely alienation whereby he experiences both himself and other people being lifeless and empty" (Ewing 1990, p. 53). Heath plead guilty to first degree murder. He refused counsel during his penalty phase and requested the consideration of the death penalty. Soon after being sentenced to death, Heath appealed his sentence citing cruel and unusual punishment under the eight amendment, which was denied by state Supreme Court. Over two decades later, Heath's death sentence was commuted to two life terms after the ruling in Roper v Simmons (2005), which held that it is unconstitutional to impose the death penalty on individuals under the age of 18 (Rosenbaum 1989; Ewing 1990; Wilkins v. State 1991).

4.5.2 Gang Related Homicides

4.5.2.1 Robert Sandifer

Robert "Yummy" Sandifer, completing a favor to his gang, Black Disciples, was only 11 years old when he opened fire on several youth, killing a 14-year old boy. He managed to elude police capture for three days, ultimately deciding to turn himself in. However, moments after reaching out to the police, he was kidnapped by fellow gang members and subsequently killed for his silence. Robert's gang involvement was no surprise to those who knew him, as he had acquired a lengthy arrest record in his short life (23 felonies and 5 misdemeanors). Robert's father was in prison and absent during his childhood, leaving him in the care of his mother, a prostitute who violently abused him, burning cigarettes into his butt, neck and arms, and beating him with electrical cords. At the age of eight, Robert dropped out of school and began roaming the streets of his neighborhood, one that was riddled with violence and crime. Soon after, Robert joined a local gang and began engaging in criminal activity. He was known as a bully to other children, often stealing money. The Department of Children and Families

was often involved in Robert's life, given the neglect and delinquency; however, they failed to place Robert in a proper living situation, later calling his case one that "slipped through the cracks." Due to his young age, Robert's constant involvement in the legal system always resulted in his release to his grandmother's chaotic home, in which 10–30 grandchildren resided at once. Left without supervision, Robert became deeply involved in the gang culture, completing errands and favors for elder gang members, tasks that would ultimately lead to murderous acts and his subsequent death. This case acts as a somber example of numerous risk factors, including chaotic and abusive home environment, violent neighborhood, crime related homicide, and gang affiliation (Terry 1994; Grace 1994; Lee and Buckley 2019).

4.6 Young Killers

4.6.1 "A.F."

A recent case, "A.F.," reveals the shocking death of a 6-month old infant at the hands of a 10-year old girl. The infant was being cared for at a daycare, which was housed at a foster care home where "A.F." resided. While holding the infant, "A.F." allegedly dropped him, prompting him to cry. Panicked and fearing the possibility of getting into trouble, "A.F." proceeded to stomp on the baby's head, resulting in his tragic death. "A.F." was charged with first degree murder in the adult court system. Early in the trial, her developmental history and psychological profile were brought into evidence. Initial proceedings included testimonies from several forensic psychologists. Defense witnesses described a girl with cognitive deficits due to inconsistent schooling, functioning at approximately seven years old. Further, they cited specific psychological issues such as post-traumatic stress disorder, depression, adjustment disorder, and disruptive mood dysregulation disorder, which accounted for violent outbursts. Her family life was described as negative, including exposure to early childhood trauma; moreover, she was recently removed from her parents' care and placed in a foster home. "A.F." attorneys successfully argued that the impact of trauma and observed cognitive deficits deemed her to be incompetent to stand trial. As of spring 2019, "A.F." was found incompetent to stand trial and committed to an adult psychiatric hospital for restoration to competency. According to recent reports, her mental state has continued to regress (Boes 2019; Hoff 2019; Terlecki 2019) (Table 4.1).

Table 4.1 Commonly endorsed risk factors in case examples

Cases and type of Homicide	Commonly endorsed risk factors				Outcomes
	Parental Absence-Single parent households	**Parental Neglect**-Lack of supervision, exposure to abuse, substance abuse, criminal behavior	**Childhood Abuse**-Sexual, physical, verbal, psychological	**Presence of psychopathology**	
Dale Whipple, 17 Parricide			✓	✓	Found guilty but mentally ill and sentenced to 70 years in prison
Robert Lee Moody, 18 Parricide		✓	✓		Given four-year suspended prison sentence with five years of probation
Alyssa Bustamante, 15 Female Homicide	✓	✓		✓	Sentenced to life in prison with the possibility of parole
Sally, 16 Female Homicide Parricide		✓	✓	✓	Committed to a state institution for youth until the age of 18
Jerry Johnson, 17 Conflict		✓	✓		Sentenced to life in prison with 25 years before parole eligibility
Heath Wilkins, 17 Crime Drug Related	✓	✓	✓	✓	Sentenced to death but overturned due to *Roper v. Simmons*

(continued)

Table 4.1 (continued)

Cases and type of Homicide	Commonly endorsed risk factors				Outcomes
	Parental Absence-Single parent households	**Parental Neglect**-Lack of supervision, exposure to abuse, substance abuse, criminal behavior	**Childhood Abuse**-Sexual, physical, verbal, psychological	**Presence of psychopathology**	
Robert Sandifer, 11 Crime Gang Related Young Offender	✓	✓	✓		Murdered by fellow gang members
AF, 10 Female Homicide Young Offender		✓	✓	✓	Ruled incompetent to stand trial; working to restore competence

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Chapter 5
The Lens of Neuropsychology: The Adolescent Brain

Examination of the brain and behavior connection is critical in the context of juvenile homicide. Neuropsychological research has shed light on potential biological functions of behavior, highlighting the key relationship between neurological factors and presenting behaviors. Currently, neuropsychologists use advanced technical means, such as functional magnetic resonance imaging (fMRI), to examine and evaluate neural structures and activities. Such imaging has greatly informed neuropsychological research, particularly in the areas of diagnostic etiologies and behavioral factors. Researchers have identified areas of the brain that are directly connected to both mental health conditions, such as schizophrenia, and behavioral presentations, such as poor decision making and impulsivity. Moreover, research has demonstrated the developmental progression of the brain over time, including specific maturational timelines for key areas of functioning (Bigler and Clement 1997; Lezak et al. 2004; Denney and Sullivan 2008).

5.1 The Adolescent Brain

The idea that the brains and behaviors of adolescents differ greatly from their elders is not a novel concept. Early developmental psychologists noted the stark contrasts in important domains of functioning in adolescents and adults, such as decision making, judgement, thought processes, impulsivity, and impact of contextual influences (American Academy of Child and Adolescent Psychiatry [AACAP] 2016). These differences in functioning correspond to human brain development and have been further demonstrated with neuroimaging. Neuropsychological research has expanded these variabilities to more refined scientific concepts in which imaging studies have identified specific brain regions and structures that differ greatly in adolescents when compared to adults (Arain et al. 2013). Such areas include major powerhouses of brain functioning, including the frontal lobes, specifically, the prefrontal cortex (PFC) and

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limbic system, key players in one's ability to utilize judgement and impulse control (Feld 2013).

In reviewing the neuropsychological research on human brain development and the differences between an adult and adolescent brain (Beckman 2004; Geidd 2004; Casey et al. 2008; Arain et al. 2013), a prominent finding relates to the composition of the frontal lobes, which contain grey and white brain matter. As the frontal lobes mature over time, changes occur to grey and white matter, by way of processes that contribute to the maturation of the brain. Firstly, as adolescents age, the grey matter begins to thin in part due to "pruning," a neural process aimed to strengthen synaptic connections with remaining neurons. In addition, the white matter within the frontal lobes undergoes significant changes over time, increasing throughout adolescence, via "myelination," a process that enhances neural connectivity, thereby enabling the brain to efficiently process stimuli. These maturational changes impact the development of important areas of functioning related to important cognitive skills, such as emotional expression, problem-solving, memory, language, and judgment (Huttenlocher 2002; Roper v. Simmons 2004).

An additional area of interest includes the prefrontal cortex (PFC), a complex portion of the central nervous system that is housed within the frontal lobes of the brain. Its primary role is the development and use of higher brain functions, such as executive functioning skills. These are the skills that enable an individual to plan and implement goal-directed behaviors by independently identifying, coordinating, and utilizing the cognitive skills required to achieve a given goal. Impairments to the PFC have revealed problems with self-monitoring, attentional and concentration difficulties, deficits in decision-making, and diminished control over impulses. Of significance, neuroimaging has demonstrated the slow developmental process of the PFC, finding that it is one of the last brain structures to fully mature (Sowell et al. 1999a, b; Roper v. Simmons 2004).

Additionally, the development of the limbic system is a significant factor in the brain and behavior connection of an adolescent. The limbic system acts as the central hub for processing and regulating emotions. As such, it plays a major role in an adolescent's propensity to engage in impulsive behaviors or seek higher or riskier levels of novelty. Moreover, the stage of development can impact the level of emotionality and vulnerability to stress experienced by an adolescent, further influencing behavioral reactions and presentations (Scott and Steinberg 2002).

5.2 Forensic Neuropsychology and Juveniles

It is important to comment on the fact that while such strong brain and behavior connections have been well documented across the literature, neuropsychologists have yet to argue for direct causation. Despite this, the identified relationships have informed research in a myriad of ways, resulting in advances across numerous professional domains, including the legal arena. The use of neuropsychological data in the context of criminal behavior has rapidly evolved over the last forty years, proving to

be an invaluable aid in legal defenses in both civil and criminal courts (see Indianapolis Union Railway v. Walker 1974 and State of Florida v. Nelson 2005). Such research has been used to inform lawyers, judges, juries, and the public at large, regarding neurological vulnerabilities that may impact an individual's decision making related to criminal acts.

The use of neurological data in the context of juvenile offenders has reinforced what has long been argued in the legal field—there are hard-wired differences in adolescents who commit criminal acts when compared to adult offenders. This knowledge has led to a more recent shift in the judicial system, in which juvenile offenders are judged in a less culpable and blame-worthy fashion, aiding in a reduction of juvenile waivers to the adult court criminal system (Dubois and Zemlin, n.d.). Further, it has shed light on adolescents' psychological vulnerabilities related to investigative proceedings, such as police interrogations (Shepherd 2005). The significance of such information has yielded major shifts in trial proceedings and outcomes, especially when considering youthfulness as a mitigating factor.

5.3 Case Law

A trilogy of Supreme Court cases (Roper v. Simmons 2005, Graham v. Florida 2010, Miller v. Alabama/Jackson v. Hobbs 2012) dealt with this very issue, applying the Eighth Amendment's ban of cruel and unusual punishment to the juvenile offending population, ultimately requiring courts to consider age as a mitigating factor in trials involving juvenile homicide. Roper (2005) argued that vulnerability to negative influences, immature judgment, and ever evolving personality traits reduced juveniles' culpability, thereby barring the most severe sentence of capital punishment for their crimes. Graham v. Florida (2010) utilized Roper's (2005) diminished responsibility rationale to argue against life without parole (LWOP) sentence for juveniles convicted of nonhomicide offenses. Lastly, Miller v. Alabama and Jackson v. Hobbs [Miller/Jackson] (2012), incorporated Roper (2005) and Graham's (2010) argument of diminished responsibility with another arm of death penalty jurisprudence to bar mandatory LWOP sentences for juveniles convicted of murder. Additionally, judges were mandated to make individualized sentencing decisions, in which the age of the offender as a mitigating factor is strongly emphasized.

Neuropsychological data related to the brain of adolescents was cited in all three Supreme Court cases, including the submission of amicus briefs for each case by the American Psychological Association (APA) and related amicus curiae in support of the defenses. The limited behavioral development of juvenile impulse control, reward sensitivity, and emotion regulation was argued. Neural images were used to demonstrate structural differences in the frontal lobe, further supporting the fact that the PFC is one of the last brain regions to fully develop. Additionally, the briefs relayed that the level of brain developmental has a direct effect on a youth's decision-making abilities, thereby impacting their understanding of actions and consequences.

While this relevant literature was not specifically discussed in the decision in Roper v. Simmons (2005), Graham v. Florida (2010), specifically cited developmental and neuropsychological research related to juvenile offenders, stating "[D]evelopments in psychology and brain science continue to show fundamental differences between juvenile and adult minds. For example, parts of the brain involved in behavior control continue to mature through late adolescence" (Graham v. Florida 2010, p. 17). This emphasis on the brain and behavior connection in youth decision-making was applied once more in the Court's decision in Miller/Jackson (2012), in which Justice Kagan, in her opinion for the majority, cited APA's brief in concluding that ongoing research in neuropsychology continues to demonstrate fundamental differences between juvenile and adult minds. Further, it was noted that the research supporting these findings has become even stronger since the Court last examined the question of life-without-parole sentences for juveniles in non-homicide cases (Miller v. Alabama and Jackson v. Hobbs 2012).

While important research in the areas of neuropsychology and brain development played a critical role in the decisions of landmark cases like those discussed, critics have argued that this research has had little impact on a larger scale. Maroney (2009) conducted a review of juvenile cases post-Roper (2005), in which developmental neuroscience was used; in his findings, he noted that the majority did not end in favor of the defendants. In his analysis, Maroney acknowledges the mixed findings in the literature, citing several studies in which adolescent neuropsychological information is suggested to be "uniquely persuasive."

However, Maroney (2009) offered a novel perspective to the data's level of persuasion, citing confirmation biases as a significant factor in legal decisionmakers' weight of the literature. He asserts that decisionmakers (much like all of us), often filter "factual assertions, including scientific ones, through their prior beliefs, values, and commitments" (Maroney 2009, p. 175). He goes on to propose that this factual filtering impacts one's decision-making process, as evidence can be accepted as relevant or credible when it aligns with implicit judgements and views and can be rejected when it does not. In light of his theory, Maroney offers recommendations for enhanced juvenile justice reform, in which the public's underlying beliefs and values are influenced in such a way that their perspective of juvenile differences is not drawn from neuropsychological data, rather from a broader understanding of the societal implications, e.g., robust data consistently documenting the higher rates of recidivism in juvenile transfers to adult courts.

Ultimately, Maroney's analysis of post-Roper (2005) cases reveals a crucial recommendation in the use of neuropsychological data in the forensic arena, demonstrating that it should never be the sole or primary factor in legal decision making. This is further supported by other critics in the legal and psychological field (Lenahan 2015). Stephen Morse, for example, who serves as the associate director at the Center for Neuroscience and Society at the University of Pennsylvania Law School contends "at present, neuroscience has little to contribute to more just and accurate criminal law decision-making about policy, doctrine, and individual case adjudication" (Lenahan 2015, p. 103).

In the context of juveniles, Cornell and Malone (2017) acknowledge the limitations of the impact of neuroscience in the Court, specifically in the realm of determining innocence. They relay "the presence of gross brain abnormality does not necessarily provide an explanation for violent behavior or indicate that the youth was not criminally responsible for his behavior at a specific time" (Cornell and Malone 2017, p. 148). However, noting the trilogy of Supreme Court cases discussed, Cornell and Malone relay that research emphasizing the developmental immaturity of brain structures and their association with impulse control, decision making, and emotional reasoning can serve as a helpful aid in the sentencing phase of trial (Cornell and Malone 2017).

While the impact of its use remains up for debate, one can argue that the knowledge gained from examining neuropsychological data in the context of criminal acts certainly provides a scientific foundation that generates a better understanding of an individual's behavioral and thinking patterns (Table 5.1).

Table 5.1 Landmark US supreme court cases

Roper v. Simmons (2005)	
Issue	Does the execution of minors violate the prohibition of "cruel and unusual punishment" found in the Eighth Amendment and applied to the states through the incorporation doctrine of the 14th Amendment?
Neuropsychological Data Cited	• Predominately cited data related to the slow maturation of the frontal lobe and its impact on impulse control and decision making – Frontal lobe is the slowest part of the brain to mature – Disrupted functions of the frontal lobe can result in a variety of impairments, e.g., risk management, foresight, strategic thinking – Frontal lobe impairments have been linked to issues with concentration, self-monitoring, and attention, along with high rates of impulsivity, and impaired decision-making skills
Ruling	Supreme Court of the United States held that it is unconstitutional to impose capital punishment for crimes committed while under the age of 18
Graham v. Florida (2010)	
Issue	Does the imposition of a life sentence without parole on a juvenile convicted of a non-homicidal offense violate the Eighth Amendment's prohibition of "cruel and unusual punishment?"
Neuropsychological data cited	• Reiterated data related to frontal lobe maturation cited in Roper v. Simmons (2005) – Utilized images from MRIs to demonstrate that the frontal lobe is the slowest part of the brain to mature • Expanded support regarding the maturational processes of specific brain regions that impact judgement: – Mature judgement requires cognitive and psychosocial skills, along with the means to coordinate the two – Neuropsychological research identified regions of the brain that govern the skills required for social and emotional maturity, e.g., impulse control, weighing risks and rewards, planning ahead, and simultaneously considering multiple sources of information, as well as the coordination of emotion and cognition • These regions are not fully formed during adolescence and continue to mature as juveniles age

(continued)

Table 5.1 (continued)

Ruling	Supreme Court of the United States held that juvenile offenders cannot be sentenced to life imprisonment without parole for non-homicide offenses
Miller v. Alabama and Jackson v. Hobbs (2012)	
Issue	Does the imposition of a life-without-parole sentence on a fourteen-year-old child violate the Eighth and Fourteenth Amendments' prohibition against cruel and unusual punishment?
Neuropsychological data cited	• Reiterated data related to frontal lobe maturation cited in Roper v. Simmons (2005) and Graham v. Florida (2010) • Reiterated data that pointed to the immature development of key brain regions in adolescents that are tied to higher order executive functions (e.g., impulse control and risk avoidance), along with the observed psychosocial (i.e., social and emotional) immaturity cited in Graham v. Florida (2010) • Introduced research emphasizing juveniles' vulnerability to the negative influence of peer pressure – Referenced fMRI studies to demonstrate this impact; findings reveal that key activation differences are observed between adult and adolescent brain regions when under the influence of peers – Brain regions associated with executive functioning and impulse control are significantly more activated in adults, while regions linked to reward processing are significantly activated in adolescents • Highlighted additional findings related to juveniles' vulnerability to reckless and risky behaviors: – Referenced the observed imbalance between the rapid increase of dopaminergic activity during puberty, which results in an increase in reward seeking, and the slower and more gradual development of the prefrontal cortex and its connections to other regions in the brain, which results in improved cognitive control and the ability to coordinate affect and cognition – Risk taking begins to decline as adolescents age; dopaminergic activity declines and self-regulatory systems continue to mature
Ruling	United States Supreme Court held that mandatory sentences of life without the possibility of parole are unconstitutional for juvenile offenders

5.4 Brain of a Juvenile Homicide Offender

Neuropsychology as it relates to youth offenders has broadly covered the observed differences in the brains of adolescents when compared to adults. As discussed previously, under-developed neural structures have been identified as major players in decision making and emotional reasoning for adolescents. This data has generated a neuropsychological lens in which the public and Court can better understand the neurological underpinnings associated with behavioral and emotional presentations as it relates to criminal acts. However, there is limited data regarding the brain of juvenile homicide offenders (Cope et al. 2014). While the lens of neuropsychology has provided novel perspectives of the brains of adult homicide offenders (e.g., Raine 2014), little is known about the neural workings of kids who kill.

Significant neuropsychological differences between violent and nonviolent juvenile offenders have been well documented across several studies (Brickman et al. 1984; Golden et al. 1996; Spellacy 1977; Kennedy et al. 2011). Overall, these findings have demonstrated that violent offenders (both adult and juvenile) have more

neuropsychological impairments when compared to nonviolent juvenile offenders, specifically in areas related to language, memory, and psychomotor speed. These deficits, along with executive dysfunction, have been associated with an increased behavioral presentation of violence, impulsivity, and aggression (e.g., Foster et al. 1993; Morgan and Lilienfeld 2000; Stanford et al. 1997). Further, high incidences of attention and learning difficulties (which often lead to diagnoses of Attention Deficit Hyperactivity Disorders or Learning Disorders) have been observed in violent youth populations (Darby et al. 1998; Retz and Rösler 2009; Mallett 2014; Cornell and Malone 2017). This is of significance, as the under-development of specific neural structures (e.g., frontal lobes), impaired neural connectivity, decreased gray matter, and white matter abnormalities have all been demonstrated in neuroimaging studies of youth with attentional and learning difficulties (ADHD Institute 2019).

Psychopathy and its associated anti-social personality traits are well documented across neuropsychological studies of adult violent offenders, especially in cases of homicide. A review of the relevant literature reveals specific neural deficits and executive dysfunction among psychopaths when compared with nonpsychopathic criminal offenders (e.g., Hare 1993; Lapierre et al. 1995; Mitchell et al. 2002; Pham et al. 2003). Adrian Raine (2014) has completed extensive research on the brain of violent offenders, including those demonstrating psychopathic traits. Notably, Raine identified dysfunction in the prefrontal cortex and limbic system as critical aspects of the presentation of a psychopath, as they are responsible for the regulation and control of emotions and behavior. Moreover, abnormalities in the functioning of the hippocampus and amygdala were identified, suggesting correlations to commonly observed traits in psychopaths, such as lack of effect and decreased fear responses.

Unfortunately, research has yet to fully enlighten us on the neuropsychological status of juvenile homicide offenders, particularly in relation to the robust findings of adult psychopathy and violent offenders. As previously reviewed, antisocial personality characteristics, many which fall under the umbrella of psychopathy (i.e., callous and unemotional traits), along with poor behavioral control (i.e., Conduct Disorder) are commonly observed in kids who kill. Among the limited neuroimaging studies available, findings revealed that adolescents demonstrating such traits were found to have reduced gray matter in critical brain regions related to emotional and cognitive control (Sterzer et al. 2007; Huebner et al. 2008; Ermer et al. 2013).

Considering these findings, Cope and colleagues (Cope et al. 2014) set out to complete one of the first in-depth neuroscientific studies of the brains of homicidal youth. Through the utilization of neuroimaging and voxel-based morphometry (an advanced MRI technique that uses the statistical approach of parametric mapping to investigate the focal differences in brain anatomy; [Masdeu and Gonzalez 2016]), the researchers compared the brains of 135 incarcerated adolescents who did not commit homicide to 20 incarcerated homicide offenders. The results of the study further supported prior research; JHOs demonstrated reduced gray matter volumes in critical neural regions, including the medial and lateral temporal lobes, hippocampus, and posterior insula. Cope et al. (2014) emphasized the importance of these findings in relation to the identification of individuals who are at high risk for engaging in serious and violent offenses.

Moreover, studies with broader scopes of investigation have resulted in additional findings related to neuropsychological impairments in JHOs. As previously reviewed, Myers and colleagues (Myers et al. 1995) set out to investigate the diagnostic, behavioral, offense, and classification characteristics of 25 children and adolescents who have killed. Regarding neuropsychological findings, the researchers observed a high frequency of neuropsychiatric impairments in their sample population, including 71% of the sample demonstrating psychiatric conditions and 43% with serious head trauma. Of note, the prevalence of traumatic brain injuries (TBI) and a history of head trauma have been consistently documented across the literature examining violent adult offenders when compared to the general population. Further, the presence of said history has also been correlated to criminal behavior and violent aggression (Lewis et al. 1986; Grafman et al. 1996; Barnfield and Leathem 1998; Golden et al. 2017).

Similar findings were established by Dr. Otnow-Lewis and colleagues (1988), who completed an analysis of the neuropsychological information collected from 14 juveniles on death row, in which nine subjects were found to have significant neurological impairments. Of additional interest, seven subjects were found to have suffered from psychotic disorders predating their incarceration, seven demonstrated major organic dysfunction while under neurological evaluation, and only two were found to have full-scale IQ sores above 90 (of note, these juvenile cases were reviewed prior to Supreme Court rulings discussed earlier). Lastly, twelve of the fourteen had endured prolonged physical abuse and five had been sexually assaulted by relatives (Lewis et al. 1988). Such findings strengthen the argument for neurological investigations into the brains of adolescents, as they provide novel information regarding specific risk factors that inform prevention and treatment.

Given the high rate of childhood trauma found in JHOs, it is important to consider its impact on brain development. It is well established that childhood trauma interferes with normal maturation of the brain and can have long lasting effects. Exposure to traumatic stress impairs the development of neural pathways, death of neurons, and synaptic pruning. It causes significant impairment to homeostasis, leading to a variety of long-term biological changes that are linked to the endocrine and nervous systems. These changes impact emotional, physiological, cognitive, social function, along with the capacity to regulate emotions and affect, as well as relate to others and develop empathy (Heide and Solomon 2006). Furthermore, exposure to prolonged childhood trauma, such as severe physical abuse, can likely interact with neurological brain dysfunction and contributes to aggressive and violent behaviors (Blake et al. 1995; Heide and Solomon 2006). Such findings greatly support the call for thorough trauma evaluations for JHOs, along with continued psychoeducation for the legal field.

Neuropsychology, albeit a relatively new practice, has proven to be an invaluable aid in countless ways. Within the juvenile context, it provides a unique lens of perspective that generates a more comprehensive understanding of adolescent actions, particularly in the realm of criminal and violent behavior. Ongoing neuropsychology research is of utmost importance, as it continues to inform practitioners, professionals, the Court, and society. Its use has been demonstrated to be a significant

contributor to the reshaping of major societal and legal perspectives and policies. Furthermore, the continued exploration of the neural underpinnings of homicidal youth will aid in creating more effective prevention and treatment models, both of which will be discussed at length in the next chapter.

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Chapter 6
Treatment of Juvenile Homicide Offenders

As discussed, it has been well established throughout the literature that juvenile homicide offenders have specific characteristics, traits, pathology, and psychosocial risk factors. While the percentage of murders at the hands of minors remains relatively low, its implications on an individual, familial, and societal level are largely negatively impactful. Additionally, given the Supreme Court rulings previously discussed, many kids who kill will return to society at some point in their lives (Myers 1992). Moreover, available recidivism studies posit that over half of JHOs will commit another crime in the future (Hagan 1997; Heide et al. 2001; Vries and Liem 2011; Cornell and Malone 2017). Collectively, this information creates a sensible foundation for the need of solid treatment options for JHOs, inclusive of prevention and post-incarceration programs, especially given the number of identified risk factors. However, much like the general research on JHOs, literature related to treatment and clinical recommendations is sparse.

6.1 Treatment Options

JHOs commonly present with several disturbances, i.e., cognitive, educational, psychological, neuropsychiatric, and family system, all of which are amenable to individualized interventions. However, the perspective of JHO treatment is broadly pessimistic, despite research supporting the effectiveness of specific interventions. (Heide 2013; Texas Youth Commission 2010) A shared assumption of many practitioners remains that JHOs largely demonstrate antisocial personality traits and therefore, would not respond well to formal interventions. As we reviewed in prior chapters, such an assumption is not an accurate portrayal of all JHOs, as many do not have antisocial personality structures or significant violent and/or delinquent histories (Myers 1992; Heide 2003).

K. A. Hernandez et al., *A Closer Look at Juvenile Homicide*,
SpringerBriefs in Behavioral Criminology,
https://doi.org/10.1007/978-3-030-38168-4_6

Dr. Myers (1992), a forensic psychiatrist and expert in matters dealing with the intersection of juveniles and the law, completed an in-depth review of the treatment available and provided recommendations for practitioners and policy makers. He presented four primary treatments for JHOs, including (a) psychotherapy, (b) psychiatric hospitalization, (c) institutional placement, (d) psychopharmacologic intervention. Myers lamented the fact that despite the presence of such options, JHOs are more likely to face legal sanctions such as incarceration, probation, and community service. This is especially true in the case of older adolescents, as demonstrated in Rosner's et al. (1979) study of 45 adolescent JHOs, 16–18 years old, in which all but one subject was sent for mental health treatment by way of a not guilty by reason of insanity. Such bleak outcomes certainly warrant the exploration of treatment options and recommendations for JHOs.

6.2 Psychotherapy

The use of psychotherapy for JHOs is generally accepted as a significant adjunctive intervention, one that may often serve as the primary mode of treatment. Myers (1992) reviewed several JHO case studies (Smith 1965; Scherl and Mack 1966; Paluszny and McNabb 1975; Tooley 1975; Pfeffer 1980) that demonstrated positive responses to psychotherapy, many of which included psychodynamic approaches that emphasized the therapeutic relationship and the promotion of empathy. However, the conceptualizations, implementations, and courses of treatments differed greatly across case studies.

For example, Smith (1965) theorized that youth engage in homicidal acts due to underdeveloped egos that do not appropriately inhibit aggression. Such underdevelopments are thought to be a result of early oral deprivation and warped development in early childhood due to disturbed family systems and relationships. As such, he utilized the therapeutic relationship to create regressive states of transference in which he assisted these individuals in gaining insight into their fragmented identities and symbiotic relationships with early caregivers. Similarly, Scherl and Mack's (1966) psychotherapeutic approach included the use of the therapeutic relationships; however, in this case, it was imperative that the clinician maintain the presentation of a "real person" in order to bring the patient's awareness to the therapist's thoughts and feelings, thereby strengthening theory of mind and empathic capabilities in the patient.

Additional approaches of psychotherapy that have demonstrated positive results include art therapy and group models (Bailey 1996a, b; Heide 2003; Cornell and Malone 2017). The latter has been suggested as a useful intervention in aiding the juvenile population to work through resistance, gain insight regarding their behaviors, and take ownership of their actions. Further, the group setting provides an environment for *in vivo* social skills interventions and the opportunity to enhance problem solving skills (Cornell and Malone 2017). Cornell and Malone (2017) propose that many JHOs can be treated with the same models that are used with youth who present

with aggression and antisocial personality features. Such approaches often place emphasis on the family system, including Multisystemic Therapy (MST; Zajac et al. 2015) and parenting skills intervention programs (Jacobs et al. 2008). Lastly, less is known about the more behaviorally and cognitively orientated approaches in the context of JHOs, requiring further research. Of note, reviews of such interventions with delinquent youth have revealed that cognitive and behavioral approaches do not account for the varied present and historical risk factors often associated with this population, e.g., low SES, parental neglect, exposure to ACES. Additionally, cognitive based therapy is found to generally be a poor match to many juvenile offenders' levels of intelligences (Samenow 1984, 1998; Persons 2009).

Myers' (1992) review of treatment studies of JHOs revealed that a common indicator for treatability was the ability to develop emotional attachment with others, thereby potentially creating an environment in which a working alliance can be established with the clinician. Additional indicators for positive responses to psychotherapy include a juvenile's capacity to self-reflect and gain insight. In contrast, presentations such as severe aggression and limited insight and intelligence are thought to be indicators for poor treatment outcomes. While a solid therapeutic relationship is a key factor to the psychotherapeutic intervention, the nature of the JHO population creates challenges in establishing a working alliance. They often present as difficult patients, whom are slow to trust the therapist. As a clinician, it is helpful to conceptualize this resistance as a result of their historical contexts of development which were often riddled with chaos and abuse (Bailey 1996b; Myers 1992, Heide 2003). Moreover, it is recommended that clinicians try their best to avoid feelings of discouragement in treatment, as therapeutic gains, albeit slow in progress, can occur.

6.3 Psychiatric Hospitalization

Several authors are in support of psychiatric hospitalization as the first phase of treatment (Haizlip et al. 1984; Pfeffer 1980; Myers 1992; Heide 2003). Inpatient treatments offer a unique setting in which a child or adolescent who has killed can be properly evaluated and stabilized. Hospitalizations of JHOs have been observed as being helpful in redirecting homicidal impulses, as well as decreasing any internal conflict (e.g., attempts to master trauma, repetition of parental violence [Pfeffer 1980]). Further, this environment grants providers the ability to comprehensively asses the youth for the variety of risk factors that may have contributed to the homicide offense (e.g., neuropsychiatric, psychosis), providing an enhanced perspective of the seemingly unfathomable behaviors. Lastly, the setting creates the opportunity for clinicians to evaluate the youth's potential for future violent behavior and to better understand the familial context in which s/he was raised in (Myers 1992; Heide 2003).

While psychiatric hospitalization is frequently utilized with JHOs, it is namely done so for young children. Recall Rosner's et al. (1979) study in which only one of the 45 16–18-year-old JHOs was sent for inpatient hospitalization. Myers (1992)

similarly relayed that adolescents are not afforded the opportunity for inpatient hospitalization, in part due to the societal perspective that older children who commit homicide are displaying criminal intention rather than being under psychological distress, as many young children are perceived. As such, when this route of treatment is provided to the older youth population, it is typically only done so when there is clear evidence of significant psychopathology, such as psychosis. However, as discussed previously, psychotic presentations are not commonly observed across JHOs, once again leading the majority of JHOs to legal sanctions as opposed to therapeutic intervention.

Recommendations for intervention during the psychiatric hospitalization are limited. Pfeffer (1980) presented a paper on this topic, broadly based on her years of experience treating JHOs. She noted that treatment for these individuals is not much different than that for other youth who are hospitalized on an inpatient basis. Pfeffer relayed that treatment for JHOs is often described as "long and intensive," in which youth experience a myriad of reactions such as defense against depression, denial, intense anxiety, and other ways to avoid acknowledgement of their acts of homicide. Therapeutic goals emphasize the strengthening of ego functioning, redirection of homicidal impulses, and reduction of conflicts for the child and parents. Intervention strategies center around assisting the youth in gaining the skills to inhibit dangerous impulses and to develop insight regarding their offenses and the related consequences.

Pfeffer (1980) contends that a hospital is the ideal setting for this type of intervention, as it provides the youth with the opportunity to regress and work through intense conflicts and affects within the safety of a therapeutic and controlled environment. Further, the structural organization of an inpatient psychiatric unit, inclusive of daily routines and group attendance are all of benefit, as they provide definitive expectations of consistency and safety. Moreover, psychiatric wards typically offer the ability to build in educational programs within treatment, which has been recommended as a key aspect to intervention (Myers 1992) given the high rates of learning and attentional difficulties previously reported. Lastly, the milieu of the hospital offers the opportunity for staff role modeling, in which they can act as empathetic and nondestructive objects, often much different than what the JHOs have experienced in their caregivers.

When considering hospital staff, it is important to discuss recommendations offered for the psychiatric hospital providers working with JHOs. Much like psychotherapists in outpatient settings, inpatient clinicians are at risk for easily burning out in their work with this population due to the resistant nature and slow progress. Further, providers in these settings often report a higher level of anxiety when working with JHOs, compared to working with other patients in the hospital. Pfeffer (1980) relays that such providers report that their anxiety is often in relation to their fear of a homicidal child acting out on them, rather than the anxiety that is often experienced for a suicidal patient, on the other hand. These counter-transference experiences can be considered appropriate considering the intervention population and are important to discuss in supervision if provided.

6.4 Institutional Placement

Despite support for the prior discussed interventions, JHOs are most often directed to institutional placement in juvenile detention centers or adult correctional facilities (depending on the availability) especially when retained in juvenile courts instead of being waived to adult criminal courts (Heide 2003). Such settings offer meager mental health services as a result of inadequate resources, i.e., funding, and a limited understanding of this population's therapeutic needs (Myers 1992; Heide 2003). Surprisingly, a review of the research reveals that institutional placement appeared to work in a significant number of cases in which lack of recidivism, i.e., the youth did not commit a subsequent offense, was used as a criterion for successful treatment at follow-up (Russel 1965; Myers 1992).

Myers (1992) summarized the factors that may contribute to the successful treatment outcomes discussed, including (a) use of time to allow maturational development of neural structures and related cognitive and emotional skills, thereby enabling the youth to gain impulse control, emotion regulation, and coping skills, (b) the act of homicide was a one-time occurrence that was not predated by a pattern of violence and aggression, rather, likely influenced by adverse psychosocial and/or psychological factors, (c) impact of the setting's therapeutic environment on the youth's personality structure, and (d) the provision of a safe and secure setting during a critical period of time in which the youth may be able to "outgrow" the delinquent behaviors. Other contributing factors to successful treatment outcomes include intra and interpersonal goals, such as creating meaningful relationships, establishing a support system, learning a vocational trade of some sort, and abstaining from interactions with their former destructive home and community environments (Gardiner 1976).

Unfortunately, the presence of rehabilitative programs in institutional placements are far and few between, as most programs are centered around behavioral interventions and group conformity (Sorrells 1981). Critics relay that this type of model is ineffective and fails to address individual needs and in more extreme cases, neglect significant psychopathology (Fiddes 1981). Moreover, even in the facilities in which mental health services are provided, they generally lack the individualized and specialized treatment necessary to meet the needs of the JHO population. This is of grave concern given the high presence of vulnerabilities these individuals experience, along with the fact that most young offenders eventually reintegrate into society.

Much like the other literature on this matter, recommendations for interventions in this setting are limited. Myers (1992) posits that while there are major barriers in providing adequate treatment to JHOs in institutional placements, there are avenues for success, especially in the context of specific JHO presentations. For example, juveniles with some degree of psychological issues (e.g., depression and adjustment disorders), disturbed family systems, and co-occurring stressful life events are suggested to benefit from a "corrective emotional experience," which he indicates could be incorporated into most juvenile institutional settings. Additionally, juveniles who have committed homicide in the context of an interpersonal conflict would benefit

from such an experience. Myers (1992) goes on to argue that ideally, such settings should be designed in a therapeutic manner and provide (a) continuous exposure to positive and supportive role models, i.e., staff, (b) sensitivity to the youth's individual needs, 3) availability of educational or vocational programs, and (c) a structured environment with clear limits.

6.5 Psychopharmacological Management

As a reader, you are likely not surprised by the fact that literature related to the use of psychotropic medications in JHOs is limited, much like the other areas explored. Myers (1992) reported that despite paucity in research, psychopharmacological interventions are a recommended intervention for JHOs. Indications for use of this treatment may include impulse control related to aggression and violence, temporary facilitation of ego control over murderous impulses, and managing symptoms related to psychotic presentations. Eichelman (1988) provides guidance on the administration of psychotropic medications for aggressive and violent juveniles, advising clinicians to (a) treat the primary presenting illness, (b) when initiating empirical interventions, utilize the most benign strategies, (c) utilize a quantifiable tool to assess efficacy, and (d) implement drug trials systematically.

In light of these recommendations, consideration of diagnostic presentation is critical. Gurnani et al. (2016) completed a literature review of pharmacotherapy for aggressive and violent children, concluding that the most effective mode of treatment was to differentiate and target the underlying disorder. Commonly used drugs to treat aggressive and violent behaviors include psychostimulants, mood-stabilizers (e.g., SSRIs), and atypical antipsychotics; at times, prescribed in conjunction with each other. The researchers relayed that while pharmacotherapy can be a helpful aid in treating such behaviors, they are often refractory (or partly refractory) to medication, regardless of administration as monotherapy or as a combined treatment. They go on to state that this is typical of youth who display early onset of severe symptoms, comorbidity, and numerous psychosocial risk factors. Furthermore, the investigators emphasize the importance of differentiating between impulsive and planned aggression, as the latter is generally less responsive to pharmacotherapy (Gurnani et al. 2016).

While the above insight is not specifically related to JHOs, it certainly assists in creating a more comprehensive guide for pharmacological treatment. Consider their reference of aggressive and violent youth presenting with numerous psychosocial stressors, much like the risk factors associated with JHOs. Moreover, the recommendation regarding pharmacotherapy as it relates to impulsive vs. planned aggression is significant in the context of the type of homicide the juvenile has committed. In addition to violent and aggressive behaviors, both affective and organic disorders are found to respond well to pharmacological treatment. Antipsychotics are primarily utilized to treat psychotic symptoms in JHOs, especially in those with ongoing aggressive behaviors in response to hallucinations or delusions, although lithium

has also been recommended. As previously discussed, organic impairments such as TBIs are commonly observed in the JHO population; neuroleptics, lithium, and propranolol have been suggested as promising treatments for such issues (Myers 1992).

Heide (2003) summarized Bendek's e al. (1989) work, in which he outlined four classes of drugs that could be considered specifically for the treatment of JHOs (anti-anxiety, antidepressants, antimanics [mood stabilizers], and antipsychotics), similar to those discussed in treating aggressive and violent youth. Recommendations were provided regarding the administration and management of such drugs, including careful monitoring for potential side effects. Treatment should be considered long-term in the case of youth with serious mental illness. In the case of individuals who have killed in the context of interpersonal conflict, antianxiety medications may be used on a short-term basis. Moreover, the authors emphasize that in the pharmacological treatment of JHOs, consideration of the youth's history of drug abuse and addiction is critical. Ultimately, it appears that pharmacological treatment can be an effective intervention for JHOs; however, a comprehensive assessment of their presentation and needs is essential, along with continued monitoring of administration and management (Table 6.1).

Table 6.1 Treatment Approaches: Strengths and Limitations

Treatment Type	Strengths	Limitations
Psychotherapy	• Demonstrated as the most effective intervention for JHOs • Targets underlying mental health concerns • Provides skills-based interventions • Variety of successful formats, e.g., group, family, art	• Limited availability • Costly • High burn out rates for clinicians
Psychiatric Hospitalization	• Provision of long-term care • Allowance for stabilization • Availability of mental health services • Psychotherapy • Pharmacological • Availability of educational and vocational programs	• Difficult to obtain via court system • Requires greater use of resources, e.g., funding • High burn out rates for clinicians and staff
Institutional Placement	• Availability of: • Psychopharmacological treatment • Educational programs • Vocational programs	• Limited, if any, mental health treatment such as psychotherapy services

(continued)

Table 6.1 (continued)

Treatment Type	Strengths	Limitations
Psychopharmacological	• Cost Effective • Easy to implement • Available in diverse settings • Can be a helpful aid in reducing aggressive and violent bxs	• No evidenced based guidance • Limited long-term success for targeted behaviors • Aggressive and violent behaviors are refractory or partly refractory • Planned aggression is not effectively treated

6.6 Additional Clinical Recommendations

While research has provided some guidance on intervention, clinicians may often feel as though they are in the dark on the matter. Thus far, clinical recommendations specific to areas discussed, i.e., psychotherapy, hospitalizations, have been provided. Given the complex nature of the treatment population, additional exploration of suggestions for practitioners is pertinent.

6.7 Assessment and Diagnosis

As we have discussed in prior chapters, JHOs are found to often present with varied behaviors, pathologies, and psychosocial histories. Cornell and Malone (2017) relay that many times, JHOs present as typically functioning teenagers with the ability to suppress signs of distress or significant psychopathology. As with any clinical case, it is imperative to complete a highly comprehensive diagnostic evaluation in which any presenting pathology can be identified and rule outs, such as severe neurological impairment or psychosis, are provided. Given the robust rates of antisocial personality features and substance abuse found in JHO's, clinicians must be well acquainted with the diagnostic presentations of related diagnoses such as Conduct Disorder and Substance Use Disorders. However, as reiterated previously, these diagnoses do not account for the variety of other pathologies observed in the JHO population (Dolan and Smith 2001; Myers et al. 1995; Rodway et al. 2011). Additionally, given the high prevalence of chronic abuse among JHOs, clinicians should be familiar with the varying manifestations of trauma and utilizing a trauma-informed approach in their clinical impressions.

Recommendations for a comprehensive evaluation include an in-depth diagnostic interview and the collection of relevant developmental and psychosocial history. Suicide risk and substance use are two critical areas that should be well explored throughout the interview. Any self-reports on behalf of the youth should be corroborated with collateral interviews with significant individuals such as family members

and witnesses. Further, a detailed review of school, medical, and legal records should be completed, with attention to any documentation of the offense from investigators, witnesses, and the defendant (Cornell and Malone 2017).

The use of psychological tests to assess specific aspects of a juvenile's presentation, e.g., intellectual functioning, presence of psychiatric symptoms, and antisocial personality features is recommended (Cornell and Malone 2017). Both projective and objective measures are suggested, including the Rorschach, the Millon Adolescent Clinical Inventory (MACI), and the Minnesota Multiphasic Personal Inventory-Adolescent form (MMPI-A). Regarding the use of such measures, Cornell and Malone (2017) caution clinicians to utilize their results as just one piece of information that informs the conceptualization and treatment model. This is of importance for forensic psychologists completing evaluations that will then be reviewed by skeptical experts hired by the counter party in trials. Lastly, diagnostic opinions related to unusual or rare conditions (e.g., dissociative identity disorder or seizure related syndromes) and a potential link to aggressive or violent behavior should be generally restricted.

6.8 Clinical Management

6.8.1 Pretrial

Due to the limited research in this area, Cornell and Malone's (2017) chapter in the Handbook of Behavioral Criminology (Van Hasselt and Bourke, 2017) served as a primary resource for guidance on this matter. The authors outlined a variety of tasks that clinicians treating JHOs must complete in order to ensure a comprehensive and potentially effective treatment approach. Firstly, as previously mentioned, risk assessments are imperative, as the youth may be experiencing acute feelings of guilt, grief, and shame, leading to increased risk for suicidal ideation, warranting ongoing monitoring. Upon administering appropriate risk assessments, clinicians must then consider the possibility of future violence directed at others, at the hands of the youth. While the seriousness of the crime is often thought to be the predictor of future violence, a review of the juvenile's behavior in relatively structured settings, such as school, is a far more useful source of information. It is noted that youth with limited historically aggressive behavior predating the homicide typically return to that baseline of behaviors. Moreover, juvenile detention staff report that in most cases, JHOs become compliant and well-behaved individuals who learn to adhere to the institutional requirements.

Thirdly, clinicians must be equipped to manage the preparation of the potentially long period of incarceration that JHOs experience prior to their trials. Oftentimes, at this point, psychotherapy is ineffective due to the high level of uncertainty that comes with awaiting trial, making it difficult for the juvenile to appropriately engage in the process or work through the tragedy of the murder. When possible, interventions

that are namely supportive and educational in nature, emphasizing skill building that supports adjustment to the daily living in an institution or correctional facilities are recommended. Additionally, youth should be encouraged to engage in some type of educational or vocational program daily in which they can work toward a high school diploma or equivalent.

Lastly, a significant issue that JHOs face in their pretrial confinement is the relational issues that have been created or further perpetuated by their homicide offense. Any existing social support systems, i.e., family or peers, will be greatly disrupted. As a result, the youth will likely face judgment and rejection and subsequent isolation. Familial relationships will be highly impacted, as members may be required to testify at trial or sentencing. Clinicians are cautiously recommended to coordinate family therapy sessions during this period. If done so, it is suggested to incorporate a supportive family member who will create a more trusting environment in which the juvenile may be able to more easily express his emotions and explore familial conflicts.

6.8.2 Post-sentencing

Cornell and Malone (2017) offer clinical recommendations for treating JHOs post sentencing, a period during which they begin to adjust to long-term confinement. Supportive approaches are recommended during the initial adjustment period; the clinician collaboratively works with the juvenile to accept incarceration and institutional routine. Typically, the therapist who begins to work with the juvenile post sentencing is a new clinician to the juvenile, as such, s/he is faced with the daunting challenge of establishing rapport and a solid therapeutic alliance with a likely challenging individual. At this point, JHOs are often unwilling to engage in treatment as they often present as discouraged or demoralized post-trial.

While pre-trial interventions are more focused on the management of the upcoming trial and aftermath of relationships, treatment post-sentencing should be approached as a long-term process in which therapeutic goals broaden to gaining insight related to the homicidal acts and contributing psychosocial and personality factors. In this regard, treatment differs for JHOs than for other violent offenders. Given the tragic nature and permeance of death and its horrific impact on loved ones, treatment related to the homicide presents a demanding therapeutic challenge in which the therapist helps the JHO to process the motivations, alternatives, and decisions that led to the homicide. This explorative process will likely lead to a range of emotions, including anger, regret, and intense grief, especially as they begin to take responsibility for their actions. Reyes (1990, 1996) recommends the use of structured therapy programs, such as psychodrama, in order to assist the youth in overcoming their denial and expediting the process of taking responsibility for one's actions.

Unfortunately, as mentioned previously, despite the research supporting the effectiveness of psychotherapy, such services are rarely offered in institutional or correctional settings. If provided, the interventions are typically short-term in nature, in which acute needs are addressed and behavior management is implemented. As we have discussed at length, such interventions are certainly ill equipped to meet the complex needs of JHOs.

6.8.3 Post-release

Consideration of JHOs post-release is of utmost importance, as many offenders will eventually be reintegrated into the community at some point in time (Heide 1999, 2013). Reentry is a difficult process, especially for youth who return to maladaptive environments such as neglectful homes, violent neighborhoods, and delinquent peers. More commonly are JHOs who serve lengthy prison sentences, resulting in reintegration well into adulthood. Follow-up interviews with adults who committed homicides as juveniles reveal that they often fear their reentry into the community, citing potential judgement and rejection by society, difficulty finding a job and means to live, and limited ability to be independent. Post-release programs such as supported employment and living (i.e., work release programs, half-way houses) are helpful aids in the transition back into the community.

What does the trajectory of life post-release look like for a JHO? Given the high rate of reentry into the community and the associated risk factors for this population, there is certainly potential for recidivism. A review of the research related to recidivism rates of JHOs reveals limited studies. Much of the earlier research was dedicated to parricide and familicide cases, initially providing positive results (see Duncan and Duncan 1971; Tanay 1973, 1976; Post 1982;). However, subsequent studies revealed mixed findings (Russel 1984; Heide 1992), including Heide's 2013 large scale follow-up study, in which four of the five offenders were rearrested post-release, including a charge of double homicide. These findings provided insight into the bleak outcomes for JHOs post-release; however, the shared limitation of small sample sizes across these studies presented difficulties in making broad conclusions.

More recent studies have made efforts to increase the sample size and type of homicidal offense; however, they fail to employ longitudinal examinations, generally offering short-term follow up data. Hagan (1997), Heide et al. (2001), and Vries and Liem (2011) provided descriptive recidivism data, such as the percentage of offenders who recidivated. These studies revealed that during the follow up periods (ranging from one to 16 years), approximately 60% of the juvenile offenders in each sample recidivated during the follow-up periods (Hagan 1997; Heide et al. 2001; Vries and Liem 2011). Trulson et al. (2012) completed a large-scale study examining recidivism of juveniles who committed gang-related homicides, finding that this population is 51% more likely to be rearrested post-release and is estimated to be 90% more likely to be rearrested for a felony offense, when compared to general homicide and

nonhomicide offenders. In review of general homicide offenders, 72% were found to be more likely to be rearrested for a new felony offense than nonhomicide offenders.

Despite the alarming rates of recidivism across JHO populations, there is so much that we do not fully understand about the numerous factors that contribute to reoffending. Khachatryana and colleagues (2016) attempted to fill in the gaps of knowledge, completing the third follow-up study (Heide et al. 2001) to Heide et al.'s original study completed in 1992. These researchers examined the long-term recidivism rates of the JHOs from the original sample population, including 59 males who were sentenced to adult prison for either attempted murder or murder in the early 1980's. In a 30-year follow up period, a staggering 90% of the released JHOs were rearrested, with more than 60% committing violent offenses. Of importance, post-release violence was found to be significantly related to race (Black JHOs are at a higher rate) and time served (the less time served the higher the rate).

Findings specifically related to treated vs untreated JHOs are scarce and have been primarily collected from a Texas youth program (Texas Youth Commission [TYC] 1996, 1997, 2010). The initial analyses of JHOs (1996) who were treated revealed lower recidivism rates than those who were not treated at the one-year mark; however, the observed differences did not hold at the three-year interval. Subsequent reviews (1997, 2010) provided more positive results at both the one- and three-year intervals, finding that JHOS who were treated were 16% less likely to be reincarcerated than those who were not (Heide 1999). These results were expanded upon more recently, finding that the offenders who completed the treatment program were 55% less likely to be rearrested. Moreover, results indicate that even youth who were enrolled in the program, regardless of their completion, were 66% significant less likely to be reincarcerated when compared to the control population (TYC 2010; Heide 2013).

Such findings provide further insight regarding the effectiveness of treatment for JHOs. These results, along with the poor post-release outcomes for this population serve to justify the serious need for continued research and implementation of evidence-based interventions for JHOs. Treatment approaches must emphasize coping, communication, and vocational skill building, along with anger management, and impulse control (Khachatryana et al. 2016). Without intervention, JHOs are at an increased risk for reengagement in offending behavior, leading to rearrests and reincarceration. Despite these findings, appropriate and comprehensive treatment is not typically made available to JHOs, especially those in adult prisons. The authors join other experts in the recommendation of increased implementation of prison-based intervention programs specifically tailored for JHOs given what we know about their specific risk factors, as it will not only provide benefit to the youth, but also to society as a whole given that most JHOs will reintegrate into the community sometime in their future (Heide 1999, 2013).

6.9 Conclusion and Future Directions

The overarching goal of this brief is to provide a comprehensive and integrative understanding of juvenile homicide. The authors have highlighted important aspects such as risk factors, common characteristics, and typologies. Clinical recommendations have been provided, many of which can be useful tools for practicing professionals. Further, the review has revealed the historical and current state of the literature examining this population. While the established body of research has provided valuable insight related to JHOs, major gaps in the research have been identified, serving as a solid justification for the continued need for research in this area of juvenile delinquency. Further exploration is critical, including increased use of methodological designs and larger sample sizes, especially in the realms of etiology, prevention, and evidence-based treatment and related outcomes. JHO continues to be an important societal, legal, and clinical concern that warrants continued investigation.

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