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Understanding Youth Firesetting Behaviors

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Abstract

Each year, youth firesetting and fireplay incidents cause millions of dollars in damages, hundreds of injuries and an average of eighty deaths in the United States. Schools are of particular interest as the majority of fires started in education occupancies are a result of an intentional act. Children start fires for a variety of reasons, younger children often engage in fireplay behaviors because they are curious about fire or because they are emulating the behaviors of adults. Adolescents engage in firesetting for a variety of reasons including peer pressure, thrill seeking, criminal intentions or because they are undergoing a crisis. Furthermore, many youth who engage in firesetting behaviors have underlying mental health issues such as fetal alcohol spectrum disorder, attention deficit hyperactivity disorder, substance abuse and autism. These conditions contribute to their firesetting behavior and need to be understood by teachers, public safety officials and youth firesetting intervention specialists to address the underlying reason for the firesetting behavior.

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CHAPTER I: INTRODUCTION

Between 2007 and 2011, an average of 49,300 fires involving fireplay or youth firesetting were reported to U.S. municipal fire departments per year. These fires caused annual averages of eighty civilian deaths, 860 civilian injuries, and $235 million in property damage (Campbell, 2014). These fires put our children, our families and our community at risk. In 2018, a 15-year-old boy was charged with arson for starting the Columbia River Gorge Fire. The fire forced the evacuation of thousands of people, burned nearly 50,000 acres and took firefighters over three months to control. The boy was sentenced to 1,920 hours of community service and to pay 36.6 million dollars in restitution, a punishment that will affect him for the remainder of his life (Youth Offender vs. The State of Oregon, 2018).

For the past nine years I have been active in the fire service. Over the last five I have worked full time as a Fire and Life Safety Educator with the Saint Paul Fire Department in Saint Paul, Minnesota. One of my duties is as a certified Youth Fire Play Intervention Specialist (YFPI). As a YFPI Specialist, I work with youth who have either been caught lighting fires or that their parents, teachers or another adult suspect them of firesetting behaviors. In those five years, I have personally worked with over fifty children who have lit fires. These fires have included children playing with matches, multiple arson fires within a neighborhood, children lighting fires to cover crimes, children lighting fires in response to neglect and abuse, and children lighting fires that claim the life of the child or another family member.

Historically, the majority of children who engaged in firesetting behaviors did so because of curiosity. They would see an adult using matches or lighters and emulate the behavior. This is not to say that these fires did not often have tragic consequences. These fires often resulted in

significant damage and the loss of a life. However, the root of the problem could be easily addressed through simple fire safety education programs. Firefighters would teach parents to be careful of lighting fires around children and ensure that fire starting materials such as matches and lighters are kept secure. They would address smoking and explain to adults the ways to make smoking safer and how to dispose of smoking materials properly. Firefighters would go into the schools and teach the children about fire safety. They would teach that matches and lighters are tools for grownups and that if they see them, they need to leave them alone. They would ensure that children know what to do when the smoke alarm sounds, the importance of having a safe escape plan and two ways out of each sleeping area. They also often donned and doffed their turnout gear to show children what a firefighter will look like when entering a burning structure.

More recently I have noticed a striking trend in my cases; a dramatic increase in the number of youth that have a mental health diagnosis or have been encouraged to seek mental health services. Over the last five years, nearly eighty percent of the children I worked with in regards to firesetting behaviors have either been recommended to have a mental health screening or have a mental health diagnosis. This led me to wonder, why are so many children with mental health issues engaging in firesetting behaviors?

In a conversation I had with Dr. Jerrod Brown, I learned that many children who engage in firesetting have some type of mental health issue (J. Brown, personal communication April 14, 2016). Some of the most common conditions that contribute to firesetting are attention deficit hyperactivity disorder, autism, fetal alcohol syndrome, oppositional defiant disorder, brain trauma, post-traumatic stress disorder, bi polar, and depression. These mental health disorders may predispose children to firesetting behaviors or limit their ability to see the danger of their behaviors.

This led me to another question; what impact does youth firesetting have within schools? Knowing that children who engage in firesetting and fireplay statistically start multiple fires before they are caught, and that only approximately ten to fifteen percent of my referrals come from schools, I was curious as to how many of these fires occur within a school setting. When I reached out to the Minnesota State Fire Marshal's office for data I learned that there is an average of fifty fires in education occupancies in Minnesota each year (Nisja, 2020) and approximately fifty percent of them are due to an intentional act (Campbell, 2019). Yet these numbers are known to be significantly lower as schools are often reluctant to report youth starting fires unless they cause a significant amount of damage or activate a response from the local fire department.

Even knowing that firesetting and fireplay can have catastrophic consequences, I have experienced teachers and administrators who simply consider firesetting a normal part of adolescence. When I have attempted to explain the dangers of firesetting and fireplay as well as the need for an intervention, I am often met with skepticism, avoidance, or fear of retaliation from parents. As such many school administrators simply choose to ignore the problem or provide inadequate consequences such as detention or suspension.

Even more startling, I recently had an elementary school teacher tell me that they encourage children to engage with fire as part of "Risk Play" educational theory. This teacher specifically requested that I educate her elementary school children on lighting fires, but not about fire safety or prevention. Young children and even young adults are unable to comprehend the speed of fire growth within the modern environment and how quickly a fire can get out of control.

Because of the increasing occurrences of firesetters with mental health issues and the prevalence of firesetting within schools this paper will examine if there is a direct correlation between certain mental health disorders and youth firesetting behaviors? If so how can the fire service partner with schools to raise awareness and promote education regarding mental health and firesetting behaviors? Furthermore, this thesis will examine the trends of youth firesetting to provide current information to first responders and educators. This will serve as to the importance of youth firesetting interventions with a primary focus on education and mental health services.

Definitions of Terms

Authority Having Jurisdiction (AHJ): An organization, office or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation of procedure (National Fire Protection Association, 2015).

Federal Emergency Management Agency (FEMA): An agency of the United States Department of Homeland Security. The agency's primary purpose is to coordinate the response to a disaster that has occurred in the United States and that overwhelms the resources of local and State authorities.

Fireplay: is defined as a youth set fire that has a low level of intent to inflict harm and an absence of malice (Putnam & Kirkpatrick, 2005).

Firesetting: Any unsanctioned incendiary use of fire, including both intentional and unintentional involvement, whether or not an actual fire / explosion occurs (National Fire Protection Association, 2015).

Nation Fire Protection Association (NFPA): An international nonprofit organization devoted to eliminating death, injury, property and economic loss due to fire, electrical and related hazards (National Fire Protection Association, 2020).

Youth Firesetter: is defined as a person through the age of eighteen, or as defined by the authority having jurisdiction, who is involved in the act of firesetting (National Fire Protection Association, 2015).

Youth Fire Intervention Specialist (YFPI): The individual who has demonstrated the ability to conduct an intake/interview with a firesetter and his or her family using prepared forms and guidelines and who, based on the policies and procedures, determines the need for referrals and/or implements educational intervention strategies to mitigate effects of firesetting behaviors (National Fire Protection Association, 2015).

YFIRES: Youth Fire Intervention Repository and Evaluation System

Statement of Questions or Topic

Is there a direct correlation between certain mental health disorders and youth firesetting behaviors? If so, how can the fire service partner with schools to raise awareness and promote education regarding mental health and firesetting behaviors?

CHAPTER II: LITERATURE REVIEW

This research was approached with three specific goals in mind. Identify the demographics, and motives of youth firesetting behaviors as well as the impact on communities. Research what specific mental health conditions have a documented connection between firesetting and fireplay behaviors. Finally, the literature review explores methods to address the problem of youth firesetting such as engineering, legislation and education.

Impact of Fireplay and Youth Firesetters on Communities

"In the hands of children, fire can be a destructive force" (Putnam & Kirkpatrick, 2005). Youth fireplay and youth fire causes an average of 49,300 fires in the United States each year. These fires cause an average of eighty civilian fatalities and 860 civilian injuries. These fires also cause over $235 million dollars in direct property damage each year (Campbell, 2014). Yet these figures are known to be dramatically underestimated as many youth set fires are not reported or are labeled as undetermined by fire investigators (Brown et al., 2016). Fire investigators are hesitant to cite arson or youth firesetting as a cause without ruling out all other potential causes. Even then many communities choose not to prosecute firesetting or arson due to the low clearance and conviction rates (Ekbrand & Uhnoo, 2015).

In the United States, fireplay and firesetting account for approximately forty percent of residential fire related deaths in children. In some subgroups of the population, this percentage is higher (Istre et al., 2002). In urban environments, fifty to sixty percent of all incendiary fires are suspected to be set by persons under the age of eighteen (Glancy et al., 2003).

With many young firesetters, the interest in fire starts at a young age and quickly can grow to obsession. This obsession does not only impact the lives of the firesetter but also the property owners, the firefighters, as well as the families and friends of the fire victims. Arson is second only to smoking as the leading cause of fire deaths in the United States. It is estimated that half of these fire fatalities are caused by juveniles engaging in firesetting or fireplay behaviors (Gilman & Haden, 2006).

The Demographics of a Youth Firesetter

Understanding the demographics of children who engage in firesetting and fireplay behaviors is critical to developing an accurate picture of the problem. This information provides clues which aid in determining the motivation for the firesetting. This data is also helpful when developing an intervention for a specific child.

Gender

Firesetting is primarily a male phenomenon with apprehended and reported firesetters being eighty percent male and twenty percent female (Glancy et al., 2003). Nationally eighty-three percent of home structure fires and ninety-four percent of outdoor fires that were determined to have been youth set were caused by males (Campbell, 2014). Males tend to start fewer fires when younger but they steadily increase from age four and peak at age ten (Osmonson, 2016).

Females tend to start lighting fires at a younger age but do so at a fairly consistent rate from age five through age thirteen. Females generally account for approximately twenty percent of firesetting cases. They are also statistically more likely to start fires that are symbolic such as a fire that destroys another person's property. The burning of the property is an attempt to

alleviate anger at the individual person. These fires can also be an attempt to avenge or eliminate an unpleasant item or experience (Osmonson, 2016). One example of this would be a child who was sexually abused and lit their bed on fire. The child is attempting to rid themselves of this experience by destroying the location where the traumatic event occured. This critical piece of information is even more telling in the fact that mattresses and bedding are one of the most common first materials ignited (Campbell, 2014).

Age

Age is sometimes considered a factor in determining the motivation for firesetting or fireplay behaviors. Typically curiosity might drive the fireplay behavior of younger children. Older children and adolescents tend to gravitate more towards firesetting and delinquent behaviors (Osmonson et al., 2016).

Younger children in preschool and kindergarten are the most likely to engage in fireplay and are the most likely to be injured or killed in the fire that they set. Fireplay injuries are the most common for infants to children who are age four. The proportion of injuries related to fireplay decreases with age (Istre et al., 2002). Part of the high fatality rate is because bedrooms were determined to be the most common place for a younger child to light a fire. These fires often go unnoticed or occur at times when parental supervision is limited (Merrick et al., 2013). This combined with modern home furnishings allows for rapid unchecked fire growth.

Race

White males born in the United States account for the largest portion of firesetters in the United States. Interestingly those males living in the western regions of the United States had

significantly higher rates of firesetting (Merrick et al., 2013). A study of socio demographic characteristics confirmed that ethnicity does play a significant role in firesetting and fireplay. In this study 83.6% of male firesetters were white, 7.2% were Hispanic, 5% were Black, 2.5% were Native American, and 1.7% were Asian. When researchers examined female firesetters the results were similar with 66.1% being white, 25.1% Black, 7.7% Hispanic, .6% Hispanic, and .4% Native American. (Hoertel et al., 2011).

Economics

Most youth firesetting experts believe that poverty also has a direct correlation between the impact of fireplay and firesetting. In a study focusing on firesetting and fireplay in the city of Dallas Texas, minority children living in low income census tracts had the highest rates of fire related injuries and deaths. Interestingly, in this same study, nearly all the injuries and deaths occurred in mobile homes and apartments (Istre et al. 2002). Some additional studies that have examined the socioeconomics of firesetters families have provided mixed results. These studies are divided with some showing a connection with poverty and the others with the middle class (Glancy et al., 2003).

Family Settings

In Minnesota from 2011-2015, forty percent of youth firesetters who completed interventions were from single family homes. Twenty-eight percent of completed youth firesetters interventions were from two parent homes. Nine percent of youth firesetter interventions came from homes of extended families. The remaining twenty-two percent of youth firesetters either had no family structure or the family structure was unknown (Osmonson, 2016).

Nationally, only twelve percent of youth firesetters live with both biological parents. The majority of firesetters come from single parent homes. This may factor into parents who are terribly overwhelmed and choose to deny a child's firesetting behaviors rather than confront the issue (Smith, 2009). The family also plays an important role in educating children regarding fire safety and behaviors. Parents are the primary educators for children. Family modeling and conversations on fire safety often focus on inappropriate uses of fire instead of appropriate safe use of fire. Furthermore children who witness adults modeling inappropriate fire safety behaviors are more likely to model those behaviors when the opportunity presents itself (Brown et al., 2016; Brown et al., 2017). Parents need to educate children on all aspects of fire safety, this includes staying a safe distance away from fire, what to do if they see matches or lighters, fire escape planning, and when fire is used appropriately.

Discord in the home is both a predictor and contributing factor of firesetting behaviors (Gilman & Haden, 2006) Children who come from families that have a history of antisocial behaviors are more likely to engage in fireplay and firesetting (Merrick et al., 2013). These children are often exposed to aggressive or violent behavior, substance abuse, and untreated mental illness. These families often have parents that have criminal records. Because of these factors, the parenting of these children tends to be absent or inconsistent which may lead to fireplay and firesetting behaviors (Glancy et al., 2003).

Rural Versus Urban

In urban environments, it is estimated that youth under the age of 18 are responsible for fifty to sixty percent of all incendiary fires (Glancy et al., 2003). Yet the majority of firesetters live in rural areas (Hoertel et al., 2011). This difference often means that younger children who

live in a rural environment and engage in fireplay are seeing fire being used as a tool in an agricultural setting. In rural settings, it is not uncommon to utilize fire as a method of disposal for leaves, branches and even garbage. This often means that utilizing fire will be a part of a younger child's regular chores.

Why Children Start Fires

Firesetting behaviors are common among children and adolescents (Brown et al., 2017). There are many reasons why children set fires. Younger children may start fires out of curiosity (Poth et al., 2018). Children may be giving into peer pressure. They may be upset about being bullied in school. Their firesetting behavior may be an attempt to get revenge or eliminate an unpleasant experience (Osmonson, 2016). Children who intentionally set fires often have other issues such as bullying, substance abuse, learning disorders, developmental issues, abuse or neglect (Poth et al., 2018).

It is important to note that term firesetting and fireplay are often used interchangeably by professionals in the fire service; yet there is a distinct difference regarding the underlying causes of behaviors. Fireplay is often used to convey a low level of intent to inflict harm and an absence of malice. Among young children and adolescents, fireplay involves elements of curiosity and fascination. The damages caused by curiosity related fires are typically collateral and are not maliciously inspired. Children and adolescents who engage in firesetting are willful actors who use fire as an instrument with some level of malice intent (Putnam & Kirkpatrick, 2005).

Regardless of the intention of the youth engaged in firesetting or fireplay, fire is dangerous. It can cause extensive damage and loss of life. It looms as the major cause of fire

related deaths for young children (Istre et al., 2002). Immediate identification and treatment of these youth is critical to prevent future losses (Gilman & Haden, 2006).

Curiosity

This type of firesetting is referred to as fireplay. Fireplay is often used to convey a low level of intent to inflict harm and an absence of malice. Among young children and adolescents, fireplay involves elements of curiosity and fascination. The damages caused by curiosity related fires are typically collateral and are not maliciously inspired (Putnam & Kirkpatrick, 2005). Curiosity and experimentation with fire is not an abnormal behavior. In fact forty to sixty percent of children admit to playing with matches or lighters (Glancy et al., 2003). Children who experiment with matches or lighters as part of their adolescent development should be treated as a child engaging in fireplay behavior as they lack the intent to cause damage (Johnson & Netherton, 2017).

It is suggested that fire play is often a result of children modeling adult fire behaviors. A child may engage in fireplay because they are emulating witnessed behaviors of adults such as lighting camp fires or fire places, smoking, and the use of candles. There is no stronger message than setting a good example example. If children witness the unsafe fire behavior of adults they are more likely to emulate that behavior in the future (Osmonson et al., 2016).

Crisis

The occurrence of a stressful event has been documented to be associated with firesetting (Glancy et al., 2003). Children in crisis may use firesetting as an expression of aggression or to attempt to gain control or rid themselves of a negative life event or situation (Osmonson et al., 2016). The occurrence of a major life event or trauma such as divorce, birth of a sibling, death of

a pet or family member, geographical move, bullying, school expulsion, and other traumatic events can exacerbate the impaired state of a firesetter and cause them to engage in fire related activities (Glancy et al., 2003).

Thrill Seeking and Peer Pressure

Thrill seeking and peer pressure are strong motivations for many adolescents that engage in fireplay and fire setting behaviors. In 2014, social media brought these behaviors to the attention of many fire departments and burn treatment facilities. In August and September of that year, children recorded as they doused themselves in flammable liquids and light themselves on fires as part of the "Fire Challenge." Why did they do so? Peer pressure, thrill seeking and the belief that they are invincible (Osmonson, 2015).

In an examination of fire setting behaviors on Youtube, researchers found more than 27,000 videos by searching the term "Fire" and "Fun." Seventy-six percent of these videos showed fireplay or firesetting behaviors. Most of these videos were either classified as entertainment or comedy by the poster. Burn injuries were clearly visible in ten percent of the videos and suspected in another ten percent. These videos were also very popular, one third of the videos had more than 10,000 views and three percent had a staggering 100,000 views (Thomas et al., 2012).

Unfortunately, these challenges have continued with many children being seriously injured. In 2018, multiple children received severe frostbite after engaging in the "Ice Challenge." In January of 2020, "The Outlet" challenge made national news after videos on Tik –Tok encouraged students to short out electrical outlets using a penny and a cell phone charger. In Massachusetts, two youth who engaged in the challenge were both charged with attempted

arson, damage to property and fined $1,200 (Alsharif, 2020). In February of 2020, “The Head Cracker” or “Jump Tripping” hit the media outlets including Youtube, and Tik-Tok. In this most recent challenge, youth were intentionally tripped when they jumped in the air during a dance. Fortunately no one has been killed by this challenge but it has resulted in several severe head injuries (Gulzar, 2020).

Social media sites have multiple examples of inappropriate and dangerous behaviors. This is a possible source for youth to be pressured by peers to engage in firesetting and fireplay behaviors. Understanding the impact of graphic risk taking behaviors via social media should be a priority for future research (Thomas et al., 2012).

Criminal Intentions

Firesetting behaviors have strong connections to criminal behavior and general criminal recidivism. Youth who display callous-unemotional traits (CUT) and engage in antisocial behaviors pose the greatest concern for criminal behaviors and recidivism. Youth who have a criminal record are more likely to set a fire that requires an emergency response when compared to youth without a criminal record. When compared to fires started by children without a criminal record, the fires started by youth with a criminal record were 15.65 times more likely to get out of control (Watt et al., 2015).

Many firesetters have a low rate of recidivism for firesetting behaviors however, firesetters who display factors such as early fireplay behaviors, reported interest in fires, and setting fires while they are alone require further evaluation by professionals. These children are at an increased risk for continued firesetting. Criminal firesetters must also be evaluated based on

their mental health history and mental state at the time the firesetting behaviors occurred (Ducat et al., 2015).

Juveniles who are charged with firesetting, may also not know better due to intellectual disabilities, cognitive and emotional impairments and brain injuries. They are unaware of the innate dangers of their behaviors and cannot see direct correlations between cause and effect (Osmonson et al., 2016). As such they often are unable to understand the consequences and danger of their behaviors.

It is shocking to know that more than fifty percent of arson arrests in 2003 were juveniles according to an FBI statistics report (Sparber, 2005). Children who continue to engage in firesetting behavior after the age of eighteen will be charged as an adult with the crime of arson instead of having the opportunity for education and assessment. Similar to children who engage in firesetting as adolescents, arsonists tend to be socially isolated, introverted and have a past criminal history. They commonly have various mental illnesses including intermittent explosive disorder, attention deficit disorder, schizophrenia or another intellectual disability (Palermo, 2015). For these reasons parents, teachers, firefighters and mental health providers play a key role in diagnosing and addressing this behavior before children reach the age of adulthood.

Connections Between Mental Health Diagnosis and Youth Firesetting

It is a well-established fact that firesetters often suffer from various mental health disorders (Ekbrand & Uhnoo, 2015). Youth that continue to engage in firesetting behaviors into adulthood are significantly more likely than their non-firesetting peers to have numerous psychiatric disorders (Hoertel et al., 2011). Therefore, a basic understanding of these conditions is important for a successful YFPI intervention.

Conduct Disorder

Conduct disorder is a prevalent diagnosis for youth who engage in firesetting. Children with conduct disorder often display behaviors of aggression, destruction of property, deceitfulness and a disrespect for rules (Glancy et al., 2003). When children with conduct disorder and firesetting behaviors were examined, studies have found that these children have high levels of delinquency, hyperactivity and extreme aggressive behaviors. These same children were also found to have lower levels of social competence when compared to their peers (Kolko & Kazdin, 1991).

Fetal Alcohol Spectrum Disorder

Fetal Alcohol Spectrum Disorder (FASD) is an umbrella term for conditions caused by prenatal exposure to alcohol which causes permanent brain damage (Brown et al., 2016). People with FASD experience adaptive, cognitive and social deficits. Because of these deficits, individuals with FASD are more likely to come into contact with the criminal justice system (Brown et al., 2017).

Impairments caused by FASD including impulsivity, behavior regulations, abstract concepts and poor concentration increase the likelihood of firesetting (Brown et al., 2016). Individuals with memory and learning deficits as a result of FASD may forget safety procedures for using fire. They also often have problems understanding cause and effect. This not only impacts the individuals ability to understand safe use of fire such as campfires and fireplaces, but also how other aspects such as size, fuel types and wind may negatively impact the fire (Brown et al., 2017).

Youth with FASD often have difficulty establishing relationships and can often be manipulated by peers, as a result these individuals may engage in firesetting behaviors to gain attention or acceptance (Brown et al., 2017). As such, individuals with FASD have a strong desire and drive to be liked and please people. This desire is especially strong with authority figures, such as police and firefighters. Due to this desire to please, police and fire investigators may get false confessions from people suffering from FASD due to their desire to please (Osmonson et al., 2016). People with FASD also are more susceptible to being tricked or coerced into accepting responsibility for crimes committed by others (Brown et al., 2016).

Substance Abuse

There are strong associations with substance abuse and firesetting behaviors. The strongest correlations are between alcohol and marijuana (Merrick et al., 2013). 73% of male firesetters and 65.9% of female firesetters admit to either alcohol abuse or dependence. 48.7% of males and 39.1% of female firesetters admit to drug use, most commonly cannabis (Hoertel et al., 2011).

Attention Deficit Hyperactivity Disorder (ADHD)

Firesetting and attention deficit hyperactivity disorder (ADHD) has been extensively studied in children. Children who engage in firesetting are commonly diagnosed with ADHD (Johnson & Netherton, 2017). Children diagnosed with ADHD may be more at risk for firesetting behaviors because the symptoms of ADHD included impulsivity and short attention spans (Osmonson et al., 2016). This means that these youth are more likely to impulsively engage in firesetting and fireplay behaviors. Their short attention spans also mean that they are

more likely to leave the fire once it is ignited. This behavior allows fires to enter the growth phase of fire development placing property and lives at risk.

Autism Spectrum Disorders (ASD)

Children with Autism Spectrum Disorder (ASD) may not react appropriately in an emergency situation. Due to the noise of smoke alarms or the fear of moving from a location they consider safe, a child with ASD will react unexpectedly and often with extreme panic. There have been numerous cases where an autistic individual has run back into a burning building looking to find a place of safety due to the lights and sounds of approaching emergency response vehicles (Leidig, 2013).

Autism is suspected as a condition that may contribute to fire setting behaviors in youth. (Ekbrand & Uhnoo, 2015) This may be a result of deficits in planning and the inability to predict consequences of actions (Radley & Shaherbano, 2011). Children with ASD have attention deficiencies and may fixate on specific behaviors such as firesetting (Osmonson et al., 2016). Failure to diagnose ASD early and provide appropriate interventions may result in significantly more adverse outcomes including other mental illnesses, social skills deficits and fixation on specific interests (Radley & Shaherbano, 2011).

Research has also found that sequencing is a very difficult skill for individuals with ASD, as they do not understand when a task is presented within a series of steps. When someone with ASD is involved in a fire emergency they are often unable to handle simple tasks in the proper sequence; activate an alarm, evacuate the building, call 9-1-1. As such, a child with ASD who engages in fireplay or firesetting behaviors may be less able to react appropriately to the dangers

of fire. Pair this with the fact that most autistic individuals have sensory issues that can cause anxiety or terror and the situation becomes increasingly likely to end tragically (Leidig, 2013).

Pyromania and Pyrophilia

Pyromania is a rare condition in which an individual suffers from intense tensions that can only be relieved by deliberate firesetting. They are regular watchers at fires within a community, may set off false alarms, and derive pleasure from fire and fire paraphernalia and equipment (Johnson & Netherton, 2017). The fires set by pyromaniacs are repetitive and intentionally destructive to other people and property. Pyromaniacs typically display persistence and deliberately plan their fires (Merrick et al., 2013). They experience a rush from their firesetting and enjoy watching the fire (Palermo, 2015).

In order for a person to be diagnosed with pyromania they must have deliberately and intentionally set a fire one more than one occasion. They have a fascination, interest or attraction to fire. The person must feel a tension or affective arousal before setting a fire. They will feel pleasure, gratification or relief from setting fires, witnessing fires or participating in the fires aftermath. They often have an interest in firemaking paraphernalia and firefighting equipment. For a patient to be diagnosed with pyromania, the firesetting behaviors cannot have been set for other specific reason such as monetary gain, political ideology, expression of anger or vengeance or is not better explained by another antisocial personality disorder (Medical Dictionary for the Health Professions and Nursing, 2012).

While pyromaniacs often feel pleasure, gratification or a release of tension from their firesetting, it is not sexual in nature. Pyrophilia is the lighting of fire specifically for sexual arousal and gratification. This condition is extremely rare amongst firesetters. In clinical studies,

of male firesetters, only one to three percent of subjects engaged in pyrophilia (Johnson & Netherton, 2017).

Legislation to Limit Firesetting and Fireplay Behaviors

Legislation can reduce the impact of firesetting and fireplay. It can limit access to ignition sources and items that may influence dangerous firesetting behaviors. It can also be used to ensure engineering safeguards which are then required by law to reduce the likelihood of a child successfully using an ignition device.

Community Specific Legislation

A tool that can be useful in addressing the issues of youth fireplay and youth firesetting is the introduction of community ordinances. For example, the cities of Blaine and Moundsview, Minnesota have enacted community ordinances that require any child under the age of 18 who are caught in possession of fire tools such as matches or lighters to attend a youth fire intervention program. The City of Saint Paul, Minnesota enacted a city wide ordinance to ban candy smoking materials as well as any novelty lighters. Known as City of Saint Paul Legislative Code 295, this legislation amended the cities legislative code based on studies in the British Medical Journal, Pediatrics Journal and Preventive Medicine Journal which demonstrated that candy cigarettes and imitation tobacco products predisposed children to tobacco use later in life. The novelty lighter portion of the code was a direct response to numerous Consumer Product Safety Commission recalls and a call for action from the U.S. Fire Administration. This second part of the code prohibited the sale of any lighter that included but was not limited to resembling cartoon characters, toys, guns, musical instruments, vehicles, animals, food, beverages, or that play musical notes or have flashing lights or other entertaining features (Ordinance Establishing

Chapter 295 of the Saint Paul Legislative Code to Prohibit Sale of Imitation Tobacco Products and Novelty Lighters, 2009).

National Legislation

Since over 80% of fireplay injuries were associated with lighters and matches, in 1994 the United States Consumer Safety Commission enacted the Child Resistant Lighter Standard Code of Federal Regulations in Title 16, Part 1210 (Istre et al., 2002). This legislation requires disposable lighters and novelty lighters to meet minimum child resistant standards. Lighters that meet these requirements must prevent 85% of children age 42 months through 51 months from activating the lighter within five minutes (United State Consumer Safety Commission, 2016).

Since the inaction of the Child Resistant Lighter Standard, nationally the number of injuries caused by fireplay has decreased. This decrease is also in part due to the reduction in smoking and children emulating smoking behaviors. However, a study examining fireplay and firesetting behaviors in Dallas Texas showed no significant decrease in fires or injuries as a result of fireplay in the years following the enactment of the standard (Istre et al., 2002).

Youth Set Fires in Schools

Between 2009 and 2011, over 4,000 school building fires were reported in NFIRS reports. These fires caused seventy-five injuries and caused over sixty-six million dollars in damages (Poth et al., 2018). Yet parents, teachers, school administrators and even police officers often choose not to report such incidents. It may be because they do not want the child to get into trouble or because they are worried that the fire may make themselves or the school look bad. They may think that it was just a small fire that caused limited damage so there is no need to report it. They may believe that firesetting and fireplay are just a phase that every child goes

through (Osmonson et al., 2016). Even mental health providers are hesitant to disclose firesetting behaviors as it can complicate placement and treatment options (Brown et al., 2016).

Since 2013, fire incidents within schools have increased to an average of 3,320 each year. These fires now annually average $42 million dollars in direct property damage cause 42 civilian injuries and one civilian death (Campbell, 2019). Incidents of deliberately set fires within schools have more than doubled over the past decade (Ekbrand & Uhnoo, 2015). Two out of every five fires in the schools in the United States were intentionally set. Forty-seven percent of the total fires in high school and middle schools were caused by an intentional human act. Thirty-seven percent of the total fires in elementary schools were caused by an intentional act (Campbell, 2019).

Intentional firesetting is the leading cause of fires in schools. These fires are most likely to occur during daytime hours when schools are at their peak occupancy. These fires most commonly originated in the lavatory or locker rooms where youth are often unsupervised. These fires are often classified as undetermined or intentionally set due to lack of confirmed ignition sources such as electrical or heating. As such, these fires can frequently be attributed to youth fireplay or firesetting behaviors (Campbell, 2019; Nisja, 2020).

Due to the densely populated nature of schools, firesetting in schools poses a significant risk to many people. Since it is atypical for a child to light a fire in plain sight, most children who light fires in schools do so in hidden and out of the way locations. These fires pose a particularly dangerous situation in older buildings that may not have updated fire protection systems such as smoke alarms, fire blocking and fire sprinkler systems. Subsequently, fires in these schools may

remain undiscovered until the fire poses a risk of major destruction and possible loss of life (Poth et al., 2018).

There are several motives that can help to explain youth firesetting behaviors in schools. Schools are often a target of arson as a result of criminal acts such as intentional vandalism or the intent to cover another crime such as a burglary. Fires may occur in schools due to a child's psychiatric problems such as autism or ADHD. A fire may be set by a child to specifically obstruct school activities such as school social gatherings or to avoid an upcoming exam or presentation. Students may engage in fire setting as a celebration such as the burning of homework in the parking lot at the completion of the school year. A fire may also occur as a side effect to other behaviors such as pranks gone wrong or not following directions during science experiments (Ekbrand & Uhnoo, 2015).

Education and Response to Youth Firesetting Incidents

In the United States, unintentional injury is the leading cause of death for people age one to forty-four. The death rates from fires in the United States are also higher than most other industrialized countries (Klas, 2015). These are deaths that can often be prevented through community risk reduction and the implementation of the five E's; education, engineering, enforcement, economic incentives, and emergency response.

Education and training lead to safer behaviors, better predictive abilities and better awareness regarding fire safety and prevention (Osmonson et al., 2016). The United States fire service has a long rich history of media campaigns and other targeted fire prevention programs within schools. Annual fire prevention week visits, fire drills within schools, Sparky the Fire Dog and Smokey Bear activities are all currently utilized by the fire service. Recently local and

state fire agencies have also created programs intended to address the issue of fireplay and firesetting behaviors. The majority of these programs focus on an intervention strategy. While systematic evaluations of these interventions are rare, most experts agree that a multisystem approach including fire, schools, law enforcement and mental health are the most successful programs (Putnam & Kirkpatrick, 2005). One way to effectively reduce firesetting in communities is to facilitate meaningful and collaborative relationships among community organizations such as schools, churches, police, fire, children's protective services and the juvenile court system. Medical staff are in an ideal setting to work with the victims of these fires and raise awareness as to the mental health needs of these patients (Sparber, 2005).

Fire safety is important for new parents, yet few early childhood programs spend time focusing on the topic. The incorporation of fire safety and burn prevention into family education within our school system will reduce the occurrence and impact of fires on our communities (Klas, 2015). Parents are often unaware of the speed at which fire grows. They are not prepared with a fire escape plan. They may not even have the recommended number of smoke alarms in their home. Incorporating these lessons into parental lessons for early childhood students prepares parents to model appropriate fire safety behaviors in the home.

Education is one of the greatest tools to reduce the impact of fire on the communities of the United States. Fire safety and prevention needs to be incorporated into United States school curriculums from kindergarten through twelfth grade in order to reduce injuries and deaths. Today's schools spend little time on fire safety education and the majority of this education is in the earlier elementary grades. Health teachers rarely mention fire safety in middle or high school curriculums and few states have educational standards for fire safety education. A once a year

visit by firefighters during Fire Prevention Week is simply not enough to increase fire safety to the level of many other modern countries (Sirianni, 2015).

Firesetting interventions are critical for youth firesetters for all ages. However, teenagers receive more interventions than younger children. This is because they are more likely to have started multiple fires and or encountered child welfare workers or law officers (Osmonson, 2016). When teaching fire safety, competent educators need to tailor their teaching to the individual needs of the child. As such, classroom teachers, counselors, and school administrators are a wealth of knowledge in addressing developmentally appropriate lessons for mainstream children and those with disabilities (Osmonson et al., 2016).

Due to the relationship between fire setting and antisocial behaviors, there is a need to develop interventions that are individualized and developmentally appropriate approaches that engage multiple disciplines within the community (Merrick et al., 2013). Developing working partnerships with members of the community including fire departments, law enforcement, and mental health providers, and schools will provide a network of resources for youth firesetters. This collaborative approach provides best short and long term outcomes for the youth as well as the community (Brown et al., 2017).

Fortunately, there are also age based distinctions in relation to firesetting behaviors within the criminal justice system. Because of their age, juveniles are often perceived to be less culpable for their actions; they are therefore classified as a “firesetter” instead of an “arsonist.” This age based distinction should encourage the fire service and educational professionals to evaluate treatment options (Putnam & Kirkpatrick, 2005).

Yet criminal charges for firesetting behaviors also need to be carefully considered as caregivers may choose not to participate in the intervention process. The addition of criminal charges may provide the necessary leverage to encourage the participation of the family and youth in the intervention process. Once the program is then completed and the youth refrains from further firesetting behaviors, the charges can be dropped by the AHJ (Brown et al., 2017).

Home safety surveys and smoke alarm installation programs are another tool that can be used to educate parents and caregivers on the dangers of fireplay and firesetting. Firefighters are able to educate participants about the leading causes of fires, including cooking, smoking and heating (Minnesota Department of Public Safety, Fire Marshal's Division, 2018). While these programs are effective at preventing fires and reducing fire related injuries and deaths, they do have limited effectiveness in relation to youth firesetting and fireplay.

Smoke alarm installation is clearly effective in preventing injuries and deaths from fire causes other than fireplay and arson. However, studies show that smoke alarms are not sufficient to prevent fireplay and firesetting injuries and deaths. The reason why smoke alarm installation programs is ineffective for youth fireplay and firesetting is due to a number of factors including the location of the fire, the rapid spread of fire, the placement of the smoke alarms, the behavior of the child after the fire starts, and the lack of supervision associated with fireplay (Istre et al., 2002).

When these types of programs are used to address or reduce the impact on firesetting and fireplay the focus needs to be placed on education. Firefighters, educators, and risk reduction professionals should educate parents and caregivers about limiting access to fire starting materials and modeling of appropriate fire safety behaviors (Istre et al., 2002). They need to

teach about where young children are most likely to start a fire, in the bedroom. There also needs to be a focus on preparation, and the importance of having multiple interconnected alarms as well as a fire escape plan.

Firesetting and fireplay are something that many teachers will encounter over the course of their career. Regardless of the cause, these behaviors put the wellbeing and lives of our students at risk. There is an average of 49,300 fires involving fireplay or youth firesetting were reported to U.S. municipal fire departments per year. These fires cause an average of eighty civilian deaths, 860 civilian injuries, and $235 million in property damage (Campbell, 2014).

For teachers of younger students, the child will most likely engage in fireplay. They have no malice and are often emulating witnessed behaviors (Putnam & Kirkpatrick, 2005). These children still need our help as they do not understand the dangers of their actions. They are ideal subjects for education involving the parents and YFPI specialists. These children often need positive modeling and lessons regarding fire safety (Osmonson et al., 2016).

For teachers of adolescent students who are engaging in firesetting, the student needs your help. They often have complex mental health issues or are in crisis and need immediate assistance that can only be diagnosed and properly treated by professionals. (Ekbrand & Uhnoo, 2015). They may be dealing with a major life event or trauma such as divorce, bullying or the death of a family member (Glancy et al., 2003). They may be dealing with a substance abuse problem, learning disorders, developmental issues, abuse or neglect (Poth et al., 2018).

Regardless of the reason a child may engage in fireplay or firesetting, it is critical that you as a mandatory reporter contact your administrator and the local fire department. (State of Minnesota Revisor of Statutes, 2019). YFPI specialists can meet with children and families to

better determine the root of the firesetting or fireplay behavior and develop an appropriate strategy for an intervention.

CHAPTER III: APPLICATION MATERIALS

Sharing information about youth firesetting and fireplay is important to educate and inform. Most people that I encounter have little to no knowledge about the dangers of this behavior or the fact that there are programs to address the issue. As such, I developed two seperate trifolds that are utilized to promote and educate the public on youth firesetting and youth firesetting interventions.

The first of my target audiences is schools and educators. Nearly fifty percent of fires in middle and high schools are a result of youth firesetting (Campbell, 2019). Yet due to their interactions with students, teachers may also discover information about a child engaging in fireplay or firesetting outside the educational setting. It is critical for school personnel to investigate all instances and suspected instances of youth firesetting and fireplay behaviors. With identification of the issue and notification of the appropriate authorities, appropriate interventions can be enacted to address and correct the behavior (Poth et al., 2018).

Yet my initial contacts with schools regarding youth firesetting and fireplay was based on teenagers being charged through the legal system or a member of the school staff suspected a child of lighting a fire. If the school chooses to act on the problem, most often the child would then be questioned by the school counselor, school nurse, or occasionally an administrator. The school staff would then possibly contact the fire department requesting assistance for these children or inform the parents that they needed to take their child to the local fire station. There was no consistent procedure and the schools often attributed these instances to normal child behaviors.

Once I made contact with these staff members and began the assessment process, school staff often informed me that they were surprised at the rigor of the assessment and intervention process. They would also often tell me about other children who may have engaged in firesetting or fireplay. As such they asked me to develop a simple flyer (Appendix A) that could be given to teachers and administrators to educate them on the dangers of firesetting and fireplay, as well as educating them on the Youth Firesetting Intervention Programs within the City of Saint Paul.

My second target audience is parents, caregivers, and first responders. With this flyer I intended to raise awareness about youth firesetting and fireplay. I wanted to make sure that people understood that a child being curious about fire is natural. Yet if a child begins to engage in fireplay or firesetting behavior, an appropriate assessment and intervention are needed (Osmonson et al., 2016).

When I first began youth firesetting interventions, I often had parents and caregivers request that I scare their child about the dangers of fire. I even occasionally received emails from firefighters stating that they had scared a child away from this behavior after an adult brought a child for an impromptu visit at the fire station. Historically, these interventions would involve scare tactics such as burning a child's toy, or showing photos of burn victims. While these may have occasionally been effective for young children engaging in fireplay, they often did more harm than good. Methods that invoke fear about firesetting and fireplay, may evoke a strong emotional response but will not typically result in behavioral change (Poth et al., 2018). While attending training as a youth firesetting intervention specialists, instructors often reference personal historic cases where a firefighter attempted to use fear as a method of education. Many

of these interactions traumatized the child leading to a fear of firefighters. In some cases these actions exacerbated the issue and resulted in more extreme firesetting behaviors.

Since parents, caregivers, and even first responders are often not familiar with firesetting and YFPI interventions. I wanted to provide them with more information on the habits to look for and an overview of the educational portion of the course. The flyer (Appendix B) informs readers about some of the statistics or youth firesetting stressing the danger of this behavior. It informs about the importance of adult participation for a successful intervention. It also stresses the importance of fire prevention within the home.

Youth firesetting intervention programs are critical to reduce the impact of fires on our community. Education is one of the greatest tools that we can use to help increase fire safety knowledge and drive down youth firesetting behaviors (Sirianni, 2015). When firesetting behaviors are addressed appropriately they can reduce deviance, promote activities that nurture a child's self-esteem, encourage cognitive development and increase responsibility within the community (Poth et al., 2018).

CHAPTER IV: DISCUSSION AND CONCLUSION

This chapter will summarize the key points of the literature review including the impact of firesetting within communities and specifically educational institutions, the role mental health plays in firesetting behaviors and the importance of appropriate education and interventions. It will provide information that is critical for the professional application to reduce the impact of firesetting and fireplay within communities. Finally, this chapter will address the limitations of the research and recommend future research into the youth firesetting and fireplay behaviors.

Summary of Literature

In the United States, youth firesetting and fireplay cause millions of dollars in damages, multiple injuries and numerous deaths (Campbell, 2014; Gilman & Haden, 2006; Poth, 2018). This behavior accounts for forty percent or more of residential fire related deaths in children (Istre et al., 2002). In urban environments, fifty to sixty percent of all incendiary fires are suspected to be set by persons under the age of eighteen (Glancy et al., 2003; Sparber, 2005). Youth firesetting and fireplay is also the leading cause of fires within educational buildings (Campbell, 2019; Nisja, 2020). Youthset fires in educational occupancies continue to be underreported and increasing in frequency (Brown et al., 2016; Ekbrand & Uhnoo, 2015).

Mental health plays a significant role in firesetting behaviors (Ekbrand & Uhnoo, 2015). The literature included within this review and presented in this thesis examines the connections between youth firesetting and fireplay behaviors and mental health. Children who engage in firesetting behavior often have intellectual disabilities, brain injuries, and various other mental health issues (Osmonson et al., 2016; Porth et al., 2018). They are also more likely to display callous-unemotional traits, abuse substances and engage in various antisocial behaviors. (Merrick et at., 2013; Putnam & Kirkpatrick, 2005; Watt et al., 2015) If these

conditions and behaviors are not addressed, firesetting or other criminal activity is likely to continue into adulthood (Hoertel et al., 2011).

Lastly, this thesis examined the role that teachers, educators, school administrators, and public safety play in addressing the issue of juvenile firesetting and providing help to those children in crisis. Over the course of a teacher's career, they are likely to encounter a child that has engaged in firesetting or fireplay (Campbell, 2014; Ekbrand & Uhnoo, 2015). Regardless of the reason for a child engaging in firesetting or fireplay, this behavior is dangerous (Istre et al., 2002). Reporting this behavior to the AHJ is a critical step to ensure the wellbeing of the child (Gilman & Haden, 2006). A collaborative approach including teachers, first responders and mental health professionals can then be activated to meet the needs of the child and the community (Brown et al., 2017; Merrick et al., 2013; Porth et al., 2018). Furthermore, continuing fire safety education lessons for children in all grade levels will raise awareness regarding prevention while reducing the impact of fires within the community (Klas, 2015; Osmonson et al., 2016; Sirianni, 2015).

Professional Application

The problem of youth firesetting and fireplay is not going away. The belief that children playing with fires and lighting fires is a normal part of adolescence is unacceptable. On December 1st 1958, the worst school fire in the history of the United States occurred at Our Lady of Angels School in Chicago. This fire started in a cardboard trash bin in the north stairwell and burned unnoticed for several minutes. The fire continued to grow and eventually cut off the main escape route for students and staff in the school. Officially this fire was classified as undetermined, however, a ten year old boy admitted to setting the fire and he was

a known firesetter within the community. This fire claimed the lives of 92 students and three teachers (Morgan, 2020).

More recently on February 18th 2020, two thirteen year old boys lit a fire in the community library in Potterville, California. This fire completely destroyed the community library and killed two of my fellow firefighters. The boys were originally charged with arson, conspiracy and manslaughter. Then on February 24th 2020, the charge of manslaughter was upgraded to murder (Shapiro, E. 2020).

These fires are only two examples of when firesetting and fireplay have had a tragic impact on our schools and community. Yet many teachers and administrators have no idea of the impact of fires with educational occupancies. Between 2004 and 2019, there were 763 fires in Minnesota Schools that were reported to local fire departments (Nisja, 2020). This number is known to be significantly higher because many schools choose not to report fires that did not cause significant damage, activate the fire alarms or sprinkler system, or fires that had no specific suspects. Based on national statistics, nearly forty percent of those fires in elementary school occupancies would have been caused by an intentional act. That number jumps to nearly fifty percent of fires occurring in middle and high schools occupancies (Campbell, 2019).

In order to reduce the impact of fires caused by youth fireplay and youth firesetting, teachers, administrators, and public safety professionals need to better understand the reasons why a child might be lighting fires. Younger children may start fires out of curiosity (Poth, et al., 2018). Children may be giving into peer pressure. They may be upset about being bullied in school. Their firesetting behavior may be an attempt to get revenge or eliminate an unpleasant experience (Osmonson, 2016). Children who intentionally set fires often have other issues such as bullying, substance abuse, learning disorders, developmental issues, abuse or neglect (Poth

et al., 2018). In many of these cases, the firesetting behavior is a symptom of a much larger problem that needs to be addressed by trained mental health professionals.

Notification of the proper authorities is critical for these children and families to receive the help that they need to prevent future fireplay and firesetting incidents. Whenever teachers, administrators or school staff encounter a child engaging in fireplay or firesetting, they have a legal requirement to make a report to the local fire department regardless of the amount of damage or the wishes of the parents or guardians (Porth et al., 2018). Under Minnesota 626.556 reporting of Maltreatment of Minors, mandatory reporters must notify the appropriate authorities as they are responsible to "protect a child from conditions or actions that seriously endanger the child's physical or mental health when reasonably able to do so" (State of Minnesota Revisor of Statutes, 2019).

Limitations of the Research

There are limitations on the research included within this review. One example of this is the limited number of participants in the studies cited. Many of these studies are limited to a small group of adolescents within a specific geographical area. (Istre et al., 2002; Walsh & Lambie, 2013).

Recently the Y-Fires national database for youth firesetting has come into existence. This tool will allow for a more in-depth examination of youth firesetting data. Even then, data related to firesetting and fireplay are often limited and under reported as participants are only required to complete limited designated fields. Currently none of these designated fields require YFPI specialists to include the mental health diagnosis of the child.

I intentionally excluded research that had limited applications to this thesis. Any research that focused on adult firesetting behaviors and arson was excluded. While many adults who engage in firesetting behaviors or arson admit to firesetting in their youth, the majority of these cases provide limited information about these earlier fires. The motives behind adult firesetting behaviors and arson are often different from those of adolescents.

Research about mental health conditions that did not provide specific information regarding firesetting behaviors was also excluded. While this information may be helpful for providing a basic understanding to YFPI specialists, the diagnosis and treatment of various mental health conditions need to be addressed by mental health professionals.

Implications for Future Research

This thesis reviewed current knowledge regarding the trends, behaviors and intervention process regarding youth firesetters and children who engage in fireplay. Furthermore it sought to determine if there are connections between firesetting behaviors and mental health issues.

An area that was not examined in this thesis is if there is a genetic connection in firesetting behaviors. Both the FEMA Long Form and the Oregon Tool, ask about family and relatives who engaged in firesetting behaviors (United State Fire Administration, 2018). While this question may show connections between that children who engage in firesetting behaviors and their adult relatives, it does not examine whether this is a result of a mental health issue or as a result of a child observing and imitating unsafe behavior.

Additional research should also be conducted regarding the connections between mental health related firesetting behaviors and urban environments. In my position working

with youth firesetters in Saint Paul Minnesota, approximately eighty percent of my cases have a mental health diagnosis. Youth fire intervention specialists that work primarily in a rural community report that the majority of their cases are diagnosed as fireplay related to curiosity. Therefore is there a connection between urban firesetting and mental health issues? Is there a possibility that a robust fire prevention program available in urban environments reduces the occurrence of fireplay? Is it possible that the youth engaging in fireplay behaviors in rural areas are undiagnosed or underdiagnosed with mental health issues?

Finally, current research needs to be conducted to indicate weather modern technology can be used to reduce the impact of youth firesetting in our communities. The 2002 study conducted by Istre, McCoy, Carlin, and McClain indicated that smoke alarm installation programs were ineffective in reducing death rates as a result of youth firesetting. These alarms were most likely stand alone battery operated alarms with limited placement. A new study needs to be conducted to examine if modern technology including interconnected smoke alarms, dual sensor alarms, sealed ten year batteries, and fire sprinklers have a direct impact on the both the financial losses and deaths caused by youth firesetting and fireplay. This study should also examine what most recent edition of the fire code was used in the structure. This would indicate whether additional deficiencies such as open chases, egress issues or a lack in the number of smoke alarms contributed to the losses.

Conclusion

Regardless of the intention of the youth who engaged in firesetting or fireplay, fire is dangerous. It can cause extensive damage and loss of life. It looms as the major cause of fire related deaths for young children (Istre et al., 2002). Immediate identification and treatment of these youth is critical to prevent future losses (Gilman & Haden, 2006).

There are several reasons why a child may engage in firesetting or fireplay behavior (Osmonson, 2016). Younger children often will often engage in fireplay as a result of witnessed behaviors or curiosity (Putnam & Kirkpatrick, 2005). Older children and teens will engage in firesetting as a result of peer pressure, because of a crisis in their life, as part of thrills seeking, or as part of criminal behaviors (Osmonson, 2016). Mental health issues are a contributing factor for many firesetters (Hoertel et al., 2011). Fire intervention specialists need to understand the role that these diagnoses may play within the intervention process.

Teachers, school staff and administrators, should be aware of the impact that youth firesetting and fireplay have on their community. Each year youth set fires cause millions of dollars in damage to schools, multiple injuries, and deaths (Campbell, 2019). School staff need to understand that when they encounter a child that is engaging in firesetting or fireplay, they are mandated to report that information to the AHJ under Minnesota laws. These children may be dealing with a substance abuse problem, learning disorders, developmental issues, abuse or neglect and are in need of assistance (Poth et al., 2018). Fortunately YFPI programs that address the needs of the youth are available. These programs that include schools, law enforcement, fire prevention and mental health are the most likely to meet with success and a reduction in recidivism (Putnam & Kirkpatrick, 2005).

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Appendix A

Understanding and Preventing Youth Fire Setting For School Staff

When is interest in fire unhealthy?

At some point in their lives, most children will show a curiosity about fire. This curiosity is natural. However, if this interest develops into playing with matches or lighters, experimenting with fire, lighting fires without parents, or experimenting with bombs and aerosol cans, chances are the child has an unhealthy interest in fire. Sometimes, even lighting a fire accidentally or being injured by fire can be a sign that the child may need assistance.

Who is the Youth Fire Setting Prevention and Intervention Program For?

The Saint Paul Fire Department's Youth Fire Setting Prevention and Intervention program is for youth of all ages. It is designed to be flexible and to educate families about fire prevention and the dangers of fire. Children can be referred to the program from parents, schools, law enforcement, counselors, or the courts.

Remember,

Matches and Lighters are tools not toys.

Keep them out of the reach of children!

Saint Paul Fire Department

645 Randolph Avenue
Saint Paul, Minnesota 55102
General Information
Phone: 651-228-6273
Fax: 651-228-6255

www.stpaul.gov/fire

Emergency: 911

For School Staff

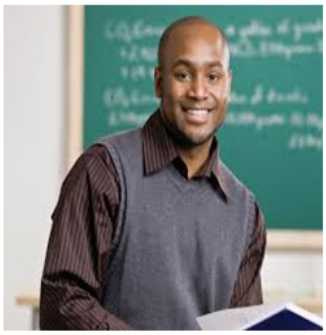
Saint Paul Fire Department

Understanding and Preventing Youth Fire Setting

Youth Fire Setting Prevention and Intervention Program

Over 50% of children killed in fires, started the fire that claimed their life!

Minnesota Youth Fire Setting Helpline
1-800-500-8897



Schools Can Help

Any student who brings to school an ignition device, such as matches, lighters, or fuel such as gasoline needs help. By calling the Saint Paul Fire Department, school staff can initiate the intervention process for a student.

The child's family contact information will be forwarded on to a youth fire setting intervention specialist so the child and family can receive life-saving information and education.

The goal of the "Youth Fire Setting Intervention Program" is not to prosecute the child, but to implement appropriate intervention strategies.

Contact the Saint Paul Fire Department's Fire and Life Safety Education Team for more information or to refer.

651-228-6203

Youth Fire Setting

Children are naturally curious about fire. When this curiosity becomes experimental, it is dangerous and even deadly. Not only is the child and those in the area at risk, but also firefighters and emergency personnel who respond to the scene.

Did You Know?

In Minnesota, youth as young as ten years old can be charged with criminal arson. Research shows that by the time a child is caught playing with fire, there have been ten previous fire starting events. (Dr. Dian Williams, Understanding the Arsonist: From Assessment to Confession) "Early intervention curbs this behavior. Children possessing matches, lighters, or gasoline, are showing a strong interest in fire, and fire setting will naturally follow."

Juvenile Arson

Juvenile arson is grossly under-reported. Families often do not know that confidential help is available. The goal of the "Youth Fire Setting Intervention Program" is not to prosecute the child, but to implement appropriate intervention strategies.

The Bureau of Criminal Apprehension reports an upward trend in juvenile arson arrests. In 2007 there were 65 children charged with criminal arson, by 2013 that number increased to over 300. These are kids over the age of ten; many more incidents involved younger children. The US Fire Administration reports that children younger than ten start 75% of the youth set fires.

Let's help these kids before they get into trouble!

Remember that there are often signs that suggest a child may have an unhealthy interest in fire.

- Look for telltale signs of fire use such as burnt matches and other items.
- Matches or lighters appearing in a student's locker, desk, pockets or backpack.
- The smell of something burnt after a student is alone
- Changes in a student's moods or behaviors
- Increased interest in or conversations about fire
- Keep an eye out for any student that smells like gasoline. In 2012, multiple students brought gasoline to school with the intention to start a fire. Often they were only noticed because a teacher noted the smell of gasoline.

Appendix B

Understanding and Preventing Youth Fire Setting For Families

When is interest in fire unhealthy?

At some point in their lives, most children will show a curiosity about fire. This curiosity is natural. However, if this interest develops into playing with matches or lighters, experimenting with fire, lighting fires without parents, or experimenting with bombs and aerosol cans, chances are the child has an unhealthy interest in fire. Sometimes, even lighting a fire accidentally or being injured by fire can be a sign that the child may need assistance.

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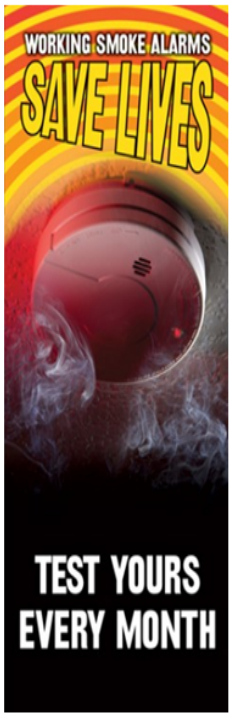

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Class Information

The class is taught by one of the Saint Paul Fire Department's Fire and Life Safety Educators, who are trained youth fire setting intervention and prevention specialists.

Youth Fire Setting Prevention and Intervention (YFPI) classes help to support parent's efforts to educate their child about fire safety. As such, parents must attend the class with their child

Topics covered in the class include:

- Fire behavior – What is fire?
- Fire safety – smoke alarms, carbon monoxide alarms, escape plans, and fire sprinklers.
- Fire prevention – home hazards.
- Victims – who does the fire affect?
- Rules and laws - What are the consequences when rules or laws are broken?

Contact the Saint Paul Fire Department's Fire and Life Safety Education Team for more information or to enroll.

651-228-6203

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Let's help these kids before they get into trouble!

Remember that there are often signs that suggest a child may have an unhealthy interest in fire.

- Look for telltale signs of fire use such as burnt matches and other items. Many times children will hide these items in closets, under beds or in the trash.
- Matches or lighters appearing in a child's room, pockets or backpack.
- The smell of something burnt after a child is alone
- Changes in a child's moods or behaviors
- Increased interest in or conversations about fire.
- Keep an eye out for any child that smells like gasoline. In 2012 multiple students brought gasoline to school with the intention to start a fire. Often they were only noticed because of the smell of gasoline.