

JUVENILE FIRESETTING

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Introduction

When juvenile delinquency is mentioned, arson is not usually the first type of offense that comes to mind. However, Federal Bureau of Investigation (FBI) statistics show that juveniles accounted for 52% of arson arrests (Office of Juvenile Justice and Delinquency Prevention [OJJDP], 1997). Juveniles are arrested for a greater share of this crime than any other age group, accounting for close to half of all structure fires, a significant proportion of hundreds of millions of dollars in damages, thousands of fire fatalities and severe burn injuries each year (OJJDP). Even more disturbing is that almost 85% of the victims of fires started by children are the children themselves (Burn Institute, 2004).

Historically, juvenile firesetting has been viewed as a problem particular to “curious kids” (U.S. Fire Administration [USFA] of the Federal Emergency Management Agency [FEMA], 1997). Fires set by children playing with matches and lighters tend to be categorized as “accidental” or “child’s play.” However, juvenile firesetting includes the deliberate destruction of property by juveniles through fire, which sometimes results in casualties (USFA). Current research trends suggest that juvenile firesetting is an intricate problem, involving a diverse, heterogeneous population of children who display a range of emotional, behavioral and environmental characteristics (Stadolnik, 2000). The complex nature of juvenile firesetting necessitates an extensive intervention and a multidisciplinary array of services (Stadolnik).

Although legal definitions of arson vary from state to state, the juvenile may be charged with arson when an evaluation of the occurrence event reveals sufficient evidence of malicious and willful firesetting, (OJJDP, 1997). Juveniles with fire involvement pose notable risks to themselves and others, with an annual toll estimated at billions of dollars in property loss, hundreds of deaths and thousands of burn injuries (McKay et al., 2006).

Causes and Risk Factors

The general lack of consensus in medical, legal, sociological, and psychiatric fields on the topic of juvenile firesetting has contributed to the many myths about the disorder, which are summarized in Table 1. Unfortunately, specific information is not available about the causes and risk factors of juvenile firesetting, as they are not definitively known. Most attention to firesetting has been included within broader categories of delinquency and aggression in children (MacKay et al., 2009). In the past two decades, professionals have attempted to conceptualize and develop theoretical underpinnings of juvenile firesetting behavior. However, firesetting is an elusive and complex behavioral problem. In order to explain firesetting, both individual and environmental predictors must be assessed simultaneously.

Table 1

Common Myths of Juvenile Firesetting Behavior

- Juveniles who set fires are pyromaniacs or arsonists.
- Firesetting is related to enuresis (bed wetting).
- Firesetting is related to sexual deviancy and/or histories of sexual trauma.
- Firesetters are sexually aroused by their behavior.
- Juveniles who play with fire, or set fires, do so because of some “urge” or “obsession” with fire.
- Firesetting is related to cruelty to animals.
- Firesetting is a rare and isolated behavior that occurs among a small group of juveniles.
- Firesetters share a core set of deviant personality characteristics.
- Older children light more dangerous and deadly fires.
- Juveniles who display firesetting behaviors are likely to become adult firesetters.
- Firesetting is a difficult behavior to treat.
- Firesetting is more common among juveniles with lower intelligence levels.
- Therapy that allows juveniles to talk about their firesetting behavior will reduce their likelihood of firesetting.
- Playing with fire is a part of normal developmental phase for young children.
- Giving youth information about fire will encourage them to want to play with fire.

Source: Stadolnik, 2000.

Researchers are attempting to gather data about the children who are firesetters and their families, the factors driving their behavior and the number of firesetting incidents associated with the child, even if a fire department has never responded to any of the fires (Wilcox, 2000). Motivational typologies, as listed, are often the most popular and simplest method by which practitioners and researchers attempt to understand juvenile firesetting (Stadolnik, 2000):

- *Curiosity motivated firesetting* is “driven by a child’s desire to learn or master fire through actual experimentation or play” (Stadolnik, 2000). Although some curiosity may be considered, to some extent, normative at certain developmental levels, extreme levels of curiosity are linked to later problematic firesetting behaviors. Recent empirical work has supported the importance of curiosity as an important factor (MacKay et al., 2006).
- *Crisis motivated firesetting* describes a juvenile who feels “ineffective, anxious and seemingly powerless in a world that they often experience as being out of their control” (Stadolnik, 2000); for these children, fire, as a powerful element, may offer a sense of mastery and competence.
- *Delinquent motivated firesetting* conceptualizes the use of fire as one means of acting out against authority. Given that firesetting is one of 15 symptoms for conduct disorder, it makes sense to correlate delinquency and firesetting.
- *Pathological motivated firesetting*, the rarest of the motivations seen by practitioners in this field, describes a severely disturbed juvenile, including those who are actively psychotic, acutely paranoid or delusional, or youth who have lived in chronically disturbed and bizarre environments. A small, rare subtype of this group may meet criteria for pyromania, if the degree of sensory reinforcement is powerful enough.

While motivational typologies can be useful in assessment and treatment interventions, many youth will present with seemingly complex motivations for firesetting behavior, thus limiting a practitioner’s ability to assign him or her within the current simplified models. Variables linked to juvenile firesetting include peer pressure, curiosity, mental health and substance abuse problems and lack of adult supervision (Burn Institute, 2004; MacKay et al., 2009). Research has also found a relationship between involvement in firesetting and parents/caregivers who smoke, due to the availability of matches and cigarette lighters and because the purposive use of fire is familiar to the juvenile (Porth & Hughes, 2000).

Comorbidity

Clinical studies that have examined juvenile firesetters found that many of these youth have conduct and aggression problems. A recent study which researched conduct disorders (CD) and firesetting found that approximately 30% of youth participating in firesetting have been diagnosed with CD (Becker, Stuewig, Herrera & McCloskey, 2004). Kolko (2002) found that early childhood firesetters often exhibit multiple behavioral problems and externalizing behaviors, such as rule breaking, aggression, destruction and attention deficit hyperactivity disorder (ADHD).

Approximately 10 to 15% of firesetting youth are females (MatchBook Journal, 2009). However, a recent study investigating the prevalence of self-reported firesetting determined that female firesetters are more likely to have serious antisocial behaviors, participate in risk-taking activities, and have a substance abuse problem (Martin et al., 2004). Another study, which researched a potential link between juvenile firesetting and delinquency, found that firesetters are more likely than nonfiresetters to be delinquent, while adolescents who continue in the practice of firesetting tend to be chronically criminal (Becker et al., 2004). Another significant finding was that firesetting may be related to extreme antisocial behavior which is not always accounted for by the presence of CD (Becker et al.). Finally, a recent study by MacKay et al. (2009) demonstrated a clear link between firesetting and mental health and substance use, and suggested that a history of firesetting was associated with psychopathology during adolescence.

Assessment

Given the paucity of research on this population, it comes as no surprise that assessment and evaluation lack clarity and uniformity in practice. Overall, individual and family-related factors that may predispose the firesetting youth should be identified in order to effectively treat this behavior. Assessing personality structure and individual characteristics, family and social circumstances, and immediate environmental conditions allow for more effective treatment (Williams & Clements, 2007). Factors to be considered include history or frequency of incidents, method, motive, ignition, target and behavior (). It is important to gather data not only to plan treatment, but also to discover the motivation behind the firesetting behavior (Sharp, Blaakman, & Cole).

As outlined by Stadolinik (2000), several domains are crucial to a comprehensive evaluation of firesetting behavior and the development of a risk factor model for assessing this behavior:

- fire incident;
- fire history;
- motives and precipitants;
- consequences/family discipline;
- developmental level/IQ;
- psychiatric disorders and history;
- family environment;
- the child's cognitive behavior repertoire;
- parent functioning and practices;
- social supports;
- service availability; and
- treatment outcome.

Despite a lack of universal acceptance, there are several firesetting assessment models, specific instruments and protocols and that have been developed and are currently utilized by practitioners and researchers in the field.

These tools, also summarized in Table 2, include:

- Children's Firesetting Inventory (CFI)
- Firesetting Risk Inventory (FRI)
- F.I.R.E Protocol: An Assessment Instrument for Firesetting Behaviors
- Fire Incident Analysis for Children (FIA-C)
- Fire Incidence Analysis for Parents (FIA-P)
- Firesetters Analysis Worksheet
- Juvenile Firesetter Needs Assessment Protocol
- Qualitative Analysis Model of Child and Adult Fire Deviant Behavior

Table 2

Suggested Assessment Tools

Measure Type	Name of Measure	Who Completes	Data Generated
Semi-Structured Interview	Children's Firesetting Inventory (CFI)	Clinician/Youth	Six dimensions related to firesetting behavior
Semi-Structured Interview	Firesetting Risk Inventory (FRI)	Clinician/Parents	Personal, familial, and social dimensions related to firesetting
Semi-Structured Interview	F.I.R.E Protocol	Clinician/Parents and Youth	Assessment of threat; risk of recidivism; specific treatment needs
Semi-structured Interview	Juvenile Firesetter Needs Assessment Protocol (JFNAP)	Clinician/Parents and Youth	Mental health needs; firesetter typology
Structured and Semi-Structured Interview	Firesetting Incident Analysis (Child and Parent forms)	Clinician/Parents	General and fire-specific variables (e.g., firesetting motives, response to fires)
Semi-Structured Interview	Firesetters Analysis Worksheet	Clinician	Risk level/risk of recidivism
Structured Interview	Firesetting History Screen (FHS)	Clinician/Parents and Youth	Evidence of firesetting activities

Sources: Palmer, Caufield & Hollin, 2005; Stadolnik, 2000; & Wilcox & Kolko, 2002.

Promising Treatments

Currently, there are no evidence-based treatment approaches for the juvenile firesetting population. However, seven components common to juvenile firesetting programs have been identified as successful by the Office of Juvenile Justice and Delinquency Prevention (1997):

1. A program management component to make key decisions, coordinate interagency efforts and foster interagency support;
2. A screening and evaluation component to identify and evaluate children who have been involved in firesetting;
3. An intervention services component to provide primary prevention, early intervention, and/or treatment for juveniles, especially those who have already set fires or shown an unusual interest in fire;
4. A referral component to link the program with the full range of agencies that might help identify juvenile firesetters or provide services to them and their families;
5. A publicity and outreach component to raise public awareness of the program and encourage early identification of juvenile firesetters;
6. A monitoring component to track the program's identification and treatment of juvenile firesetters; and
7. A juvenile justice system component to forge relationships with juvenile justice agencies that often handle juvenile firesetters.

Additional treatment components which have been suggested in the literature are fire service collaboration and fire safety education, behavioral interventions, family therapy and hospitalizations, residential placement and/or medication (Stadolnik, 2000). Unfortunately, there is no single identified treatment that is considered effective for treating this behavior, but many treatments have proven beneficial in the management of this behavior. They can be appropriately applied to firesetters with consideration for their age (Slavkin, 2000). These treatments are outlined in Table 3 as What Works, What Seems to Work and What Does Not Work.

Table 3

**Summary of Treatments for Juvenile Firesetters
by Level of Support**

What Works	Description
No treatments meet criteria.	N/A
What Seems to Work	Description
Cognitive Behavioral Therapy (CBT) Fire Safety Education	Structured treatments designed to intervene with children who set fires. Education includes information about the nature of fire, how rapidly it spreads, and its potential for destructiveness, as well as information about how to maintain a fire-safe environment, utilizing escape plans and practice, and the appropriate use of fire.
What Does Not Work	Description
Ignoring the problem	Leaving the youth untreated is not beneficial because they typically do not outgrow this behavior and ignoring these behaviors may even increase dysfunctional behavior patterns.
Satiation	Satiation, the practice of repetitively lighting and extinguishing fire, may cause the youth to feel more competent around fire and may actually increase the behavior.

Sources: Kolko, 2001; USFA, 1997; OJJDP, 1997; Stadolnik, 2000; Slavkin, 2000.

Cognitive Behavioral Therapy and Fire Safety Education

Cognitive Behavioral Therapy (CBT) and fire safety education were found to significantly curtail firesetting and match play behaviors up to a year after intervention (Kolko, 2001). Structured treatments designed to intervene with children who set fires were also found to have greater effect in the long-term than brief visits with a firefighter (Kolko). Both CBT and fire safety education were also shown to be effective at reducing other activities associated with firesetting, such as playing with matches and being seen with matches or lighters (Kolko).

Regardless of the seriousness of an incident or the child’s motive in starting a fire, education regarding fire should be part of the intervention strategy. Education should include information about the nature of fire, how rapidly it spreads and its potential for destructiveness (USFA, 1997). Information about how to maintain a fire-safe environment, utilize escape plans and practice, and use fire appropriately has been shown to be an effective component of comprehensive arson intervention programs, at least for younger youth (USFA).

Treatment Settings

Sometimes it is determined that the juvenile should be confined to a secure facility, residential treatment center or hospital, although treatment for firesetting usually occurs in the least restrictive environment, depending on the seriousness of the offense and on the needs of the child (USFA, 1997). Although many juvenile firesetters can be maintained in the community with appropriate supervision, careful assessment is crucial in order to provide the appropriate level of care (USFA). Such an assessment must consider the child, family, environment, facts about the fire and fire history, as well as the child’s reaction to the fire and sense of accountability (USFA). Further, consideration should be given to ensuring that the child does not pose a risk to others and the public safety is protected.

Residential Facility

Many programs will not admit a child with a history of firesetting for fear the child will set fire in the facility (USFA, 1997). However, residential treatment can provide a safe and comprehensive setting for treatment to firesetters, as well as treatment for any other co-occurring or familial issues.

Foster Care

There is a strong link between neglect and abuse and firesetting, so placing a child in a safe, supervised family setting can be very effective. When firesetting occurs as a result of neglect or abuse, the removal of the outside stressors can often cause the firesetting behavior to cease (USFA, 1997). Certain foster homes can be classified as “intensive” foster homes to allow for these difficult types of placements (USFA). Considerable attention is placed on fire safety practices and the foster parents receive in-depth training in working with difficult adolescents. Such training includes communication and problem-solving skills, supervision, and restraint, behavior management, and fire safety education for prevention and intervention

(USFA). Children in foster care receive counseling and additional support services, and the firesetter's parents are included as a component in the treatment plan (USFA). It is very important that the risk be acknowledged in this and any other community-based treatment intervention. Emphasis is placed on training and making the firesetter aware of the potential dangers of firesetting (USFA).

Inpatient Hospitalization

Although inpatient facilities may also be reluctant to accept children with a history of firesetting, inpatient treatment may be effective if an effective treatment protocol is in place (USFA, 1997). For example, Kolko (2002) has reported success using CBT to treat firesetting in an inpatient setting.

Unproven and Contraindicated Treatments

It is important to acknowledge that, while simple curiosity about fire is normal, firesetting is not. Leaving the child untreated is not beneficial, as recent studies have shown, because typically do not outgrow this behavior (Waupaca Area Fire District, 2002). Ignoring firesetting is unwise because it communicates disinterest in the child's well-being and experiences, which is likely to escalate dysfunctional behavior patterns (Sharp et al., 2005). Accordingly, the problems must be dealt with to prevent the fires from increasing in number and intensity.

Satiation, the practice of repetitively lighting and extinguishing fire, was once thought to be a deterrent to firesetting, based on the idea that a child curious about fire will tire of the exposure. However, the more practice a child has with fire, the more competent he may feel, which may make him more likely to increase the behavior (Sharp et al., 2005). Satiation, therefore, should not be used with children who set fires.

Conclusion

Current theories suggest that juvenile firesetting behaviors appear to stem from a complex interplay of individual and environmental factors. Given their unique circumstances and characteristics, individual firesetters require extensive evaluation to determine the best course of treatment. An appropriate review of firesetting should include an examination of the firesetter's history, such as prior fire learning experiences, cognitive and behavioral reviews, and parent and family influences and stressors (Slavkin, 2000). Finally, given the lack of evidence-based risk factors, assessment methods and effective intervention strategies, this population warrants increased attention.

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Organizations

Focus Adolescent Services

Firesetting and Youth

<http://www.focusas.com/Firesetting.html>

SOS Fires: Youth Intervention Programs

The Youth Firesetting Intervention Resource Site

<http://sosfires.com>

U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA)

U.S. Fire Administration

<http://www.usfa.dhs.gov>

U.S. Department of Justice

Office of Juvenile Justice and Delinquency Prevention (OJJDP)

National Juvenile Firesetter/Arson Control and Prevention Program Clearinghouse

Virginia Department of Fire Programs (VDFP)

<http://www.vafire.com>