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Firesetting in Young People

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Firesetting is common in young people but has serious potential consequences in terms of death, injury and financial cost. For example, insurers estimate that the cost of fire damage to UK schools in 2001 was £65 million (APB, 2003). Many authors make a distinction between firesetting (which may include “match-play” and the setting of small fires in gardens) and “arson” where there is intent to cause significant harm to property or person. However, under UK law “Arson” is simply defined as an act of criminal damage where the property is damaged or destroyed by fire.

Approximately one third of all arson attacks in the UK are thought to be carried out by those under 18 (Canter & Almond, 2002) with adolescents showing higher levels of aggression and lower rates of psychosis and alcohol dependency than adult arsonists (Bradford & Dimock, 1986). Courts treat arson cases seriously, with around a third of disposals being custodial (Soothill, Ackerley & Francis, 2004), although this figure may be lower for those under 18.

Young firesetters are frequently encountered in mental health settings (Kolko, Day, Bridge, *et al*, 2001b) and, in particular, forensic services. Health professionals may become involved in relation to their firesetting behaviour, co-existing mental health problems or associated medico-legal proceedings.

This article reviews research findings regarding juvenile firesetting, making some suggestions regarding the assessment and management of young people who engage in this behaviour.

The Demographics of Firesetting in Youth

“Fire-play” and experimentation with fire is almost universal in children, probably peaking in incidence at 12-14 years (Jones, Langley & Penn, 2001) with one Canadian survey reporting a life-time prevalence of 88% in adolescent boys and 81% in girls (Cotteral, McPhee & Plecas, 1999). Thankfully such activity does not usually result in significant harm to either person or property. Rates of more persistent or serious fire-setting vary considerably between studies, although all cite higher rates in males: an Australian community survey reported that 10% of boys and 3% of girls (average age 13 years) had engaged in destructive firesetting (Martin, Bergen, Richardson, *et al*, 2004). A Scandinavian survey of 736 school-aged children reported that 35% reported playing with fire “fairly often” (Terjestam & Ryden, 1996).

Regular firesetters are more likely to report emotional problems, poor psychosocial functioning and a wide range of conduct problems (Martin, Bergen, Richardson, *et al*, 2004; Sakheim & Osborn, 1999). Young mental health patients may also be more likely to report playing with matches (Kolko, Day, Bridge, *et al*, 2001a) and engage in repeated episodes of firesetting at 2 year follow-up (Kolko, Day, Bridge, *et al*, 2001b). One North American study also reported higher recidivism rates for youths in foster care compared to two-parent homes (Franklin, Pucci, Arbabi, *et al*, 2002).

There are no prospective studies that report adult outcomes in young arsonists.

However, there is some evidence from retrospective surveys that adults with mental disorder and a conviction for arson were more likely to have a history of juvenile fire-setting compared to non-mentally disordered arsonists (Barnett, Richter, Sigmund, *et al*, 1997).

Theories of Juvenile Firesetting

There is a proposal that arson is a response to stressful circumstances (internal or external) for people who may have deficits in problem solving and other pro-social skills, providing an escape from difficult situations (Jackson, Glass & Hope, 1987). Hence both positive reinforcement (restoring positive circumstances) and negative reinforcement (avoiding undesirable consequences) play a role. The theory assumes arson is a rational act and perceived as the solution by the offender and is called the '*only viable option theory*'. Consistent with this theory, juvenile firesetters have been found to have high levels of emotionality and impulsivity and low levels of sociability and assertiveness (Kolko, Kazdin & Meyer, 1985; Kolko & Kazdin, 1991). Thus, both personality and environmental circumstances are relevant when attempting to understand acts of arson (Kolko, 1985).

Juvenile firesetting has also been viewed as a displacement activity relating to unexpressed anger. Some support for this view has emerged with evidence of an association between adolescent firesetting, shyness, feelings of rejections by peers and aggressive feelings (Davis, Chen & Glick, 2003).

Numerous attempts have been made to divide firesetters into distinct groups, usually according to the motivation behind the act. For example, Cordess proposes 13

categories of fire-setter, according to putative motive (Cordess, 1995). These include:

- revenge*
- curiosity*
- attempts to conceal criminal evidence*
- fetishism*
- part of gang activity*
- insurance fraud*

Swaffer and Hollin (Swaffer & Hollin, 1995) interviewed a sample of 17 young firesetters and found evidence of several such motives including revenge, crime concealment, peer pressure, self-injury and fascination. Slavkin and Fineman (Slavkin & Fineman, 2000) propose six types of juvenile firesetters, according to such motives:

- Non-pathological* (“curiosity” or “accidental” type)
- Pathological* (the “cry-for-help” type)
- Delinquent* (where fire-setting is part of wider antisocial behaviour)
- Severely disturbed* (includes young people who experience paranoia and psychosis)
- Cognitively impaired* (impaired judgement present)
- Socio-cultural* (fires set for peer approval)

A similar classification has also been suggested based on the observed clustering of motivational factors into four main groups (DeSalvatore, 2002):

- Curiosity* (mainly 2-6 year olds experimenting with fire)
- Crisis* (often 6-10 year olds setting fires following an incident at school or home)
- Delinquency* (fire-setting as part of conduct disorder in adolescence)
- Pathological* (youths with higher levels of psychological disturbance and obsessions relating to fire)

The US Department of Justice (U.S. Department of Justice, 1997) also emphasises that factors underlying firesetting are often age-related:

-*Children under seven* -curiosity or accident

-*8-12 year olds* -curiosity or experimentation

-*13-18 year olds* -long histories of undetected fire-starting are common with firesetting reflecting emerging psychosocial conflicts.

However, individuals may set fires on several occasions for differing reasons. An alternative classification system, based on predisposing and precipitating factors has been proposed (Puri, Baxter & Cordess, 1995) (see Table 1) which could be applied to juveniles.

[INSERT TABLE 1 HERE]

Assessment

Young firesetters often present numerous vulnerabilities including reduced social ability (Showers & Pickrell, 1987) and substance misuse (Martin, Bergen, Richardson, *et al*, 2004). It is therefore important that assessment is broad in scope, gathering information on educational, social, family and psychological factors from a variety of sources, taking into account confidentiality issues.

Psychological assessment may be useful in a number of ways; cognitive testing may assist with identifying intellectual deficits and/or co-morbid psychological or psychiatric disorder. Personality evaluation may also be helpful. Firstly, general personality evaluation using instruments such as the Millon Adolescent Clinical Inventory (MACI) (Millon, Millon & Davis, 1993) may give rise to a better understanding regarding the motivations behind fire-related behaviour. Secondly, in

more severe conduct disorder, the Psychopathy Checklist-Youth Version (PCL-YV) (Forth, Kossen & Hare, 2003) may be helpful in delineating emerging antisocial personality traits which are strongly related to re-offending.

Regarding risk assessment, the use of structured instruments may complement clinical evaluation, though not all structured violence risk assessment instruments include items relating to firesetting activity. A number of screening tools are available to help detect the risk of firesetting in young people. For example the “Juvenile with Fire: Screening Tool” (Yovanoff & Bullis, 1998) comprises a parent check-list, interview and a youth interview, each with around 10 items pertaining to fire-related behaviour. Youths achieving high scores are referred for fire education or other interventions. Alternatively, the Fire-Setting History Screen (FHS) is a 14 item questionnaire designed to provide structure when gathering information on fire related behaviour in a young person over both the life-time and the last 12 months (Kolko & Kazdin, 1988). The Firesetting Incident Analysis- Child Version (FIA-C) (Kolko & Kazdin, 1994) comprises 21-items relating to the circumstances surrounding a particular fire and can form the basis of an interview with the child.

Assessment should ultimately lead to a formulation which includes a statement regarding the risks that a young person presents to themselves and others over the short, medium and long term. The formulation also forms the basis for planning management strategies aimed at addressing unmet need.

Management Strategies

In recent years a number of initiatives, including local Arson Prevention Task Forces, have been set-up in response to the problem of juvenile firesetting. These often involve the Fire Services, usually in co-operation with Education and other agencies. School visits are made by a fire officer who educates the students on the nature of fire, fire safety and the consequences of deliberately started fires. Youngsters felt to be more at risk of firesetting at screening (either due to interest or previous behaviours) may receive more intensive fire-safety education, sometimes in small groups. However, such educational approaches may not comprehensively address the needs presented by more persistent or serious firesetters who will require multidisciplinary and multiagency working. Orchestrating Police, Social Services, Education and Health input is no easy task, though designation of a key worker who co-ordinates care and meetings may help. For those over 16 years of age involved with Mental Health Services, the Care Programme Approach (CPA) may provide some overall framework to document and co-ordinate management planning (Home Office & Department of Health, 1999). Information relating to risk should be shared appropriately between agencies. Where risk to the public is deemed very high a Multi-Agency Public Protection Arrangement (MAPPA) meeting may be convened for this purpose.

Psychological treatment may be required to address the factors underlying firesetting. Treatment should help the individual to gain insight into these, developing strategies for dealing with situations pro-socially. This may involve learning more effective problem solving strategies and social skills. It may also be necessary to develop improved tolerance to unpleasant emotions. Court Parenting Orders may help ensure

the young person is managed and supervised more effectively. Intervention always contains a strong educative component and usually places a significant emphasis on behavioural analysis and modification through identifying putative positive and negative reinforcers. More recently more attention has also been paid to the cognitive aspects of therapy. Indeed, a Cognitive-Behavioural Therapy (CBT) model for the treatment of fire-setting behaviours in young people has been proposed (Kolko, 2002). This uses the principles of CBT to address dysfunctional thoughts and behaviours relating to the risk of fire-setting at three levels:

- *child level* (e.g. they may feel justified in setting fires when treated “unfairly”)
- *parent level* (e.g. parental behaviour may be unknowingly rewarding firesetting behaviour)
- *family level* (e.g. conflict solving skills may be poor within the family as a whole)

Thus, strategies are applied to the systemic as well as the individual context, leading to a somewhat eclectic therapeutic strategy. At least one randomised study suggests that this approach may be effective in reducing match-play and frequency of fire-setting in young people who have exhibited this behaviour (Kolko, 2001). However, at present there is no evidence to suggest that such an approach is more effective than less intensive interventions such as fire-safety education programmes.

Group treatments may be provided in either a community or secure (health or criminal justice) setting. Some guidance on specialised group treatment for young fire-setters is provided by Richardson (Richardson, 2002). In general, such groups should comprise 6-8 participants, a therapist and a co-therapist and meet once or twice weekly for approximately one hour. Important therapy targets include:

- *increasing of self-understanding* (including motives for fire-setting)

- *increasing victim empathy*

- *improving problem-solving skills*

- *increasing sense of responsibility for actions*

Such intervention can be effective if implemented in this population, although evidence is lacking regarding the relative superiority of any one approach (Adler, Nunn, Northam, *et al*, 1994; Kolko, 2001; Raines & Foy, 1994). However, extrapolating from studies of interventions for conduct disorder, it is likely that therapeutic strategies are most effective when used in younger, less severe and more motivated individuals (Kazdin, 2000).

Conclusion

Young people presenting to mental health services should be routinely asked about firesetting activities, particularly where other antisocial behaviour is part of the presenting picture. Where there is evidence of ongoing firesetting the individual should be referred for intervention. At present treatment packages and availability vary but there is growing evidence that a variety of approaches may be effective in reducing this potentially serious behaviour.

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Predisposing Factors	Example	Precipitating Factors	Example
Psychiatric Factors	Depression	Psychiatric Factors	Worsening Depression secondary to alcohol misuse
Psychological	Poor Impulse Control	Psychological	Dispute with teacher at school
Psychosocial	Delinquent Peer Group	Psychosocial	Exclusion from School

Table 1. A classification of firesetting according to predisposing and precipitating factors (Puri, Baxter & Cordess, 1995).