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# Dangerousness in firesetters: a survey of psychiatrists' views

## AIMS AND METHOD

The assessment of the future dangerousness of firesetters is problematical but psychiatrists may be requested to perform assessment of arsonists for the courts. We surveyed the views of psychiatrists and others ( $n=54$ ) on how 11 candidate historical variables might contribute to future dangerousness.

## RESULTS

Hierarchical cluster analysis indicated that variables fell into three groups related to level of perceived dangerousness. Apparent intention to endanger life and setting fire to an occupied building were the items thought by psychiatrists to most indicate highest future dangerousness. Having previously set fires that

caused extensive damage, failure to extinguish previous fires or alert the authorities were perceived as indicating moderate future dangerousness.

## CLINICAL IMPLICATIONS

The study adds to what is known about how psychiatrists formulate assessments of future dangerousness.

Individuals convicted of arson in the UK may be defined as dangerous offenders under the Criminal Justice Act 2003 if the court assesses them to pose significant risk of serious harm to members of the public by repeat offending. Under the Act, arson is designated a 'serious specified offence': one of a range of violent or sexual offences that would otherwise attract a maximum determinate sentence of 10 years or more. The major corollary of the formal codification of the category 'dangerous offender' is that those convicted of a 'serious offence' such as arson may only be released 'when it is considered safe to do so' (Sentencing Guidelines Council, 2004). The responsibility for determining dangerousness lies, of course, with the court. However, Prins (2005) notes that the courts are generally inclined to call for psychiatric reports in all but the most apparently straightforward cases. Psychiatric studies commonly find high levels of mental disorder in firesetters (e.g. Rix, 1994; Puri *et al*, 1995) though, notably, Home Office research (e.g. Arson Prevention Bureau, 1998) suggests that only 17% of those arrested for arson have a mental disorder. It is possible that, as Prins (2005) further claims, even in apparently straightforward cases of arson as part of an insurance fraud there may well be an underlying psychiatric disorder. Clearly, then, firesetting and assessment of firesetter dangerousness is relevant to psychiatrists.

Identifying dangerousness in firesetters is problematic. Brett's (2004) review of the literature on dangerousness and recidivism among firesetters argues that there is insufficient evidence to conclude that firesetters are, as a group, dangerous recidivists. The review found differences in recidivism rates across studies from 4 to 60%, and notes that these vary across the populations studied, including different rates among the mentally ill, criminals and by gender. These figures are not especially helpful when assessing an individual patient, and Brett calls for further research on subgroups of arsonists. Some progress has been made. For example, an 'action system model' (Canter & Fritzon, 1998; Fritzon *et al*, 2001; Almond *et al*, 2005) has been proposed to

explain arson in relation to internal and external motivations for and targets of firesetting. The current authors have examined gender differences, confirming higher levels of psychiatric disturbance in female firesetters (Dickens *et al*, 2007).

One area related to assessment of dangerousness in arsonists that has received little attention is the views of psychiatrists who may routinely come into contact with them. Clearly more research is needed on arsonists themselves, but we wanted to examine which historical variables psychiatrists believe are best able to predict future dangerousness.

## Method

A questionnaire was devised comprising 11 candidate historical variables (Table 1) to indicate dangerousness in firesetters. Candidate variables were identified from the literature and were informed by the data collection phase of a previous study (Dickens *et al*, 2007). Questionnaires were circulated at a national forensic psychiatry

**Table 1. Mean rating of candidate dangerousness variables by psychiatrists ( $n=54$ )**

Dangerousness variables	Mean	s.d.
An apparent intention to endanger life	2.87	0.34
Setting fire to an occupied building	2.74	0.52
Apparent premeditation to firesetting	2.43	0.72
Using fuel or accelerants	2.37	0.71
Meeting ICD-10 criteria for pathological firesetting (pyromania)	2.35	0.71
Setting fire on more than one occasion	2.17	0.58
Setting fire at multiple points at one site	2.13	0.70
Setting more than one fire in a short period of time	2.00	0.61
Failing to call fire services after the fire takes hold	1.76	0.87
Making no attempt to extinguish the fire	1.76	0.70
A fire which causes extensive damage	1.67	0.75



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conference. Participants were requested to indicate on a four-point Likert scale how dangerous they rated each variable in terms of risk to others in the future. The four points on the scale were: 0, not dangerous at all; 1, slightly dangerous; 2, moderately dangerous; and 3, highly dangerous. Participants were also requested to state their position and profession.

### Data analysis

Data were entered into SPSS 14.0 for Windows for analysis. Mean score and standard deviation was calculated for each variable. Hierarchical cluster analysis was performed (using squared Euclidean distance as the similarity measure and employing Ward's method). Hierarchical cluster analysis aims to group entities on the basis of their similarity. The reporting procedure for the cluster analysis and the procedure used to determine the number of clusters was informed by Clatworthy *et al* (2005).

### Results

Completed questionnaires were received from 54 participants including consultant forensic psychiatrists (*n*=15), consultant psychiatrists (*n*=11), other non-consultant psychiatrists (*n*=17) and others (*n*=11). Five of the others had not indicated their job role and the remaining six specified that they were lecturers but did not indicate their professional status. In order to identify any systematic difference in ratings based on experience or status, we used the Mann–Whitney *U*-test to test for statistically significant differences between: (a) consultant forensic psychiatrists and other participants; and (b) between all consultants and all other participants; and (c) those whose status or profession was unclear and all others. No significant differences were found on ratings of any of the 11 variables for any of the groups.

Table 1 shows, in descending order, the mean (*s.d.*) rating for each candidate dangerousness variable. Figure 1 shows a dendrogram detailing the agglomeration of

#### Box 1. Variable groups derived from hierarchical cluster analysis

Cluster 1: Variables indicating high perceived dangerousness

- Setting fire to an occupied building
- Apparent intention to endanger life

Cluster 2: Variables indicating medium to high perceived dangerousness

- Meeting ICD–10 criteria for pyromania
- Setting fire on more than one occasion
- Spate firesetting in a short period of time
- Setting a multiple point fire
- Using fuel/accelerants
- Apparent premeditation

Cluster 3: Variables indicating medium perceived dangerousness

- Failing to call fire services
- Making no attempt to extinguish fire
- Fire which causes extensive damage

variables from the hierarchical cluster analysis. Examination of the dendrogram and agglomeration schedule suggested an inconsistent increase in the dissimilarity measure after eight combinations of variables, suggesting the clustering process should be stopped one stage prior to this, at which point three clusters of variables were apparent (Box 1). In addition, the sample was randomly divided into two groups and the cluster analysis repeated on each with similar results.

### Discussion

We investigated 54 psychiatrists' and others' views on dangerousness related to arson. We found some evidence to suggest that there may be three clusters of historical variables that reflect psychiatrist's perceptions of the level of future dangerousness of firesetting behaviour. These are listed in Box 1.

Participants reported that the previous setting of fires that caused extensive damage was the item that

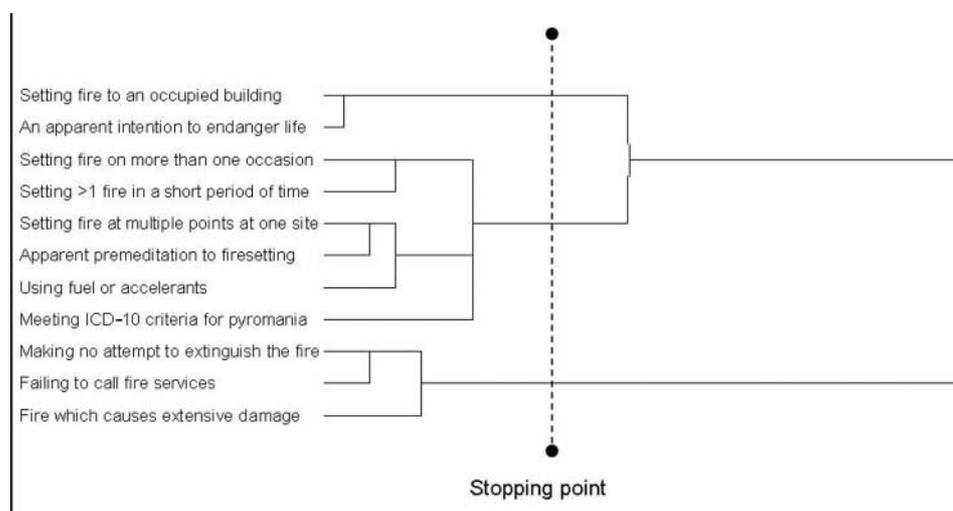


Fig. 1. Dendrogram of clustering of firesetter dangerousness variables (using Ward's method).



they rated lowest in terms of indicating future dangerousness. This probably reflects the unpredictable nature of fire itself, and how a firesetter's intention about the seriousness of the fire may not correlate with its outcome. Conversely, participants rated as most indicative of dangerousness the item 'intention to endanger life', followed by setting fire to an occupied building.

Much arson research concentrates on further classification of firesetters. This is laudable, and is undoubtedly necessary. However, those involved with arsonists additionally require tools to assist in rating future dangerousness irrespective of their category.

## Study limitations

The aim of the study was to investigate psychiatrist's perceptions of firesetter dangerousness. As such, we make no claims that the results constitute an objective measure of future dangerousness. The number of variables was limited in order to make the questionnaire simple and quick to complete. Studies of arsonists typically employ numerous (tens or even a hundred) variables. Importantly, we limited our study to the examination of a subset of historical variables, and we are in no way suggesting that clinical, risk management and other historical variables do not play a part in dangerousness. Clearly, psychopathy and active mental illness also play a role in arson and firesetter dangerousness. In addition, legal assessment of dangerousness for the court will comprise a wide-ranging assessment of other serious risk of causing harm and not only firesetting. We could not calculate a response rate for our questionnaire as sampling was opportunistic, with the questionnaire distributed at a national conference. It may be, therefore, that the respondent sample was biased to those with a particular interest in the topic. In addition, the profession/status of 11 respondents was unclear; however, their responses did not differ significantly from respondents we know to be psychiatrists. Hierarchical cluster analysis is essentially a heuristic device, and it is possible that items are assigned to clusters where none truly exist. However, we repeated cluster analysis on randomly selected halves of the sample with similar results which indicates that the resulting clusters have some validity. The variable 'meeting ICD-10 criteria for pyromania' represents a multifaceted concept including multiple firesetting, preoccupation with fire and burning, tension prior to firesetting and excitement following, and excludes those with mental disorder, personality disorder and comorbid substance misuse (World Health Organization, 1992). Others involved with arsonists,

including the police and fire services, may not share the views of psychiatrists.

## Conclusion

When asked to report on the relative importance of historical variables in the assessment of arsonists for future dangerousness, psychiatrists appear to place greatest emphasis on two particular items: apparent intention to endanger life and setting fire to occupied buildings. The extent of damage caused by previous fires has less bearing on perceptions of future dangerousness.

## Declaration of interest

None.

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