Risk assessments for deliberate firesetting: Difficulties, recent advancements, and best practice

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EACH year deliberately set fires place an enormous strain on emergency services, incur significant financial costs, and endanger many lives. However, many of these fires are not legally recorded as the criminal offence of arson. Therefore, the term deliberate firesetting is used to capture all intentionally started fires, regardless of whether they have resulted in legal action. Deliberate firesetting represents a substantial problem internationally (Tyler et al., 2019), but remains an often overlooked and under-researched form of offending. To date, the likelihood of individuals with a history of firesetting repeating this problematic behaviour has been poorly understood. Furthermore, what constitutes best practice when it comes to risk assessments for this population has been unclear. This is concerning since accurate risk assessments are crucial for clinicians when making decisions about treatment needs, appropriate interventions, and the length and conditions of detention.

Base rates of reoffending: A clearer picture emerging

Until recently, one of the primary challenges faced by clinicians working with individuals with a history of deliberate firesetting was the lack of clear base rates of reoffending on which to base risk-related decisions. Previous reviews of the firesetting literature have

described vast variation across the reoffending rates reported by individual studies (e.g. Brett, 2004). This variability is likely due to considerable methodological differences, including type of reoffending examined (e.g. firesetting offences vs. any crime), source of reoffending information (e.g. convictions vs. self-report), and sample used (e.g. psychiatric vs. prison). These reviews also included retrospective studies and combined treated and untreated reoffending rates, which significantly limited their clinical utility and left clinicians in a difficult position.

However, our recent meta-analysis of follow-up studies (N=12,294; Sambrooks et al., 2021) has attempted to address these issues by establishing base rates of arson, firesetting, and general reoffending among untreated firesetters. The meta-analysis concluded individuals with a history of deliberate firesetting are often versatile in their subsequent offending; the general reoffending rate of 57-66 per cent revealed up to two thirds engaged in any further criminal activity. Comparatively, when examining only offences of arson, reoffending appeared much less frequent, with a base rate between 8 and 10 per cent. This may, however, merely reflect the low conviction rate for arson (Doley, 2003), as the base rate increased to 17-20 per cent when a broader definition of 'firesetting reoffending' was used. Firesetting reoffending included a wider range of fire-related risk behaviours, rather than just the legal offence of arson, and drew upon a more extensive variety of reoffending information sources, including parental reports. This highlights the importance of clinicians considering non-official records of deliberate firesetting behaviour and utilising multiple sources to ensure their risk assessments are rigorously informed. In addition to assisting clinicians to complete evidence-based risk assessments, these base rates emphasise the need for an ongoing focus on deliberate firesetting. It is now clear that for many individuals deliberate firesetting is a persistent problem, and one that frequently coexists with other criminal behaviour.

Risk assessment tools: A limited selection

Another significant issue when considering risk appraisals for this population is the lack of standardised risk assessment tools. Compared with other types of offending (e.g. violent and sexual), deliberate firesetting is at a distinct disadvantage in terms of risk assessment instruments. Furthermore, the few existing tools have often not been subject to rigorous evaluations. Given this scarcity of fire-specific tools, some clinicians instead use the HCR-20 (Douglas et al., 2013) to guide firesetting risk assessments. However, as the HCR-20 was designed for assessments of violence risk, its use should be restricted to cases where firesetting occurred in the context of actual, attempted, or threatened violence. It is not appropriate for the many other motivations that can underlie firesetting (e.g. financial gain, cry for help), and thus its application to deliberate firesetting is severely limited. In addition, the HCR-20 does not explicitly capture fire-specific risk factors. To address this, the HCR-20 can be accompanied by the St Andrew's Fire and Arson Risk Instrument (SAFARI, Long et al., 2013). The SAFARI is a semi-structured interview protocol designed to capture information concerning the situations in which firesetting is likely to occur, the cognitive, affective and behavioural antecedents to firesetting, and the potentially reinforcing consequences of firesetting. The reliability and validity of the SAFARI were determined to be satisfactory when used with women within secure clinical settings (Long et al., 2013). Therefore, in instances where fire was used in pursuit of violence, the use of the SAFARI alongside the HCR-20 may be a justifiable approach. However, other tools are needed if the motivations behind the firesetting are non-violent.

One tool that could be utilised in such cases is the Northgate Firesetter Risk Assessment (NFRA, Taylor & Thorne, 2013, 2019). The NFRA captures information on a range of factors empirically linked to firesetting through examination of 10 historical items (e.g. previous incidents of targeted firesetting; substance use problems) and 10 clinical items (e.g. impulsivity; social ineffectiveness). However, it must be noted the NFRA was originally developed and designed for adults with an intellectually disability, and its reliability and validity have not been examined. Alternatively, the Firesetting Risk Assessment and Management Worksheet (Logan et al., 2010) offers clinicians an information gathering guide covering 16 predisposing factors (e.g. history of firesetting, anger management problems) and seven precipitating factors (e.g. active symptoms of major mental illness, intoxication). The worksheet directs clinicians to produce a risk formulation, as well as risk scenarios which can subsequently be used to inform treatment planning. However, a significant limitation of the worksheet stems from the lack of empirical support for some of the factors (e.g. sexual dysfunction). Conversely, there are also factors that research has highlighted as significant risk factors for repeat firesetting that are not present in the worksheet (e.g. fire interest; see Tyler et al., 2015). Hence, the existing fire-specific risk assessments do not provide comprehensive coverage of the many risk factors likely to contribute to firesetting behaviour.

Using the Multi-Trajectory Theory of Adult Firesetting (M-TTAF)

To overcome this, clinicians can instead undertake a Structured Professional Judgment approach guided by the Multi-Trajectory Theory of Adult Firesetting (M-TTAF; Gannon et al., 2012). The M-TTAF is the most recent multi-factor theory of adult-perpetrated deliberate firesetting, and was developed by incorporating prior theories of firesetting, the latest empirical evidence, and the authors' clinical experience of working with this population. Consequently, using the M-TTAF to structure risk assessments represents an evidence-based approach that accounts for a broad array of potential risk factors. The M-TTAF details the developmental context, psychological vulnerabilities, critical risk factors, proximal factors, and moderators associated with deliberate firesetting. This presents clinicians with a clear and thorough framework to guide the initial information gathering process. It also offers a structure by which this information can be organised into a formulation, which will provide a narrative of how the factors interacted and contributed to the firesetting incident(s).

Conclusion

Research into deliberate firesetting, and reoffending by individuals with a history of this behaviour, is still in its relative infancy. Risk assessments are fundamental to a number of critical decisions about the care and treatment pathways of these individuals, and therefore it is imperative that the evidence base should grow. Recent advances in the literature have provided greater clarity regarding base rates of reoffending among this population, which will enable more defensible risk assessments to be undertaken. There remain few evaluated tools available, and so a more defensible approach may to be to draw upon the most up to date theoretical framework – the M-TTAF – to structure information gathering and risk formulations.

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References

Brett, A. (2004). 'Kindling theory' in arson: How dangerous are firesetters? *Australian & New Zealand Journal of Psychiatry, 38*(6), 419–425. doi.org/10.1080/j.1440-1614.2004.01378.x

Doley, R. (2003). Pyromania: Fact or Fiction? *The British Journal of Criminology, 43*(4), 797–807. doi.org/10.1093/bjc/43.4.797

Douglas, K.S., Hart, S.D., Webster, C.D. & Belfrage, H. (2013). *HCR-20: Assessing risk for violence (Version 3).* Burnaby, BC: Mental Health, Law, and Policy Institute, Simon Fraser University.

Gannon, T.A., Ó Ciardha, C., Doley, R.M. & Alleyne, E. (2012). The Multi-Trajectory Theory of Adult Firesetting (M-TTAF). *Aggression and Violent Behavior, 17*(2), 107–121. doi.org/10.1016/j.avb.2011.08.001

Logan, C.G., Brown, P. & Martin, J. (2010). Firesetting risk assessment and management: A structured professional judgement approach [Paper presentation]. Rampton Hospital, England.

Long, C., Banyard, E., Fulton, B. & Hollin, C. (2013). Developing an Assessment of Fire-Setting to Guide Treatment in Secure Settings: The St Andrew's Fire and Arson Risk Instrument (SAFARI). *Behavioural and Cognitive Psychotherapy, 42,* 1–12. doi.org/10.1017/S1352465813000477

Sambrooks, K., Olver, M.E., Page, T.E. & Gannon, T.A. (2021). Firesetting Reoffending: A Meta-Analysis. Criminal Justice and Behavior. doi.org/10.1177/00938548211013577

Taylor, J.L. & Thorne, I. (2013). Pathological firesetting by adults: Assessing and managing risk within a functional analytic framework. In C.G. Logan & L. Johnstone (Eds.), Managing clinical risk. Routledge.

Taylor, J.L. & Thorne, I. (2019). Assessing firesetters with intellectual disabilities. *Journal of Intellectual Disabilities and Offending Behaviour, 10,* 102–118. doi.org/10.1108/JIDOB-10-2019-0020

Tyler, N., Gannon, T.A., Dickens, G.L. & Lockerbie, L. (2015). Characteristics that predict firesetting in male and female mentally disordered offenders. *Psychology, Crime & Law, 21*(8), 776–797. doi.org/10.1080/1068316X.2015.1054382

Tyler, N., Gannon, T.A., Ó Ciardha, C., Ogloff, J.R. & Stadolnik, R. (2019). Deliberate firesetting: An international public health issue. *The Lancet Public Health, 4*(8), e371–e372. doi.org/10.1016/S2468-2667(19)30136-7

ACRONYMS & ABBREVIATIONS

Each issue we'll list three common acronyms or abbreviations in use in psychometric circles. Feel free to send in suggestions!

LMP	leadership motive pattern
ZPD	zone of proximal development
MBD	minimal brain disfunction