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The development of the Adapted Firesetting Assessment Scale

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The development of the Adapted Firesetting Assessment Scale

Abstract

Background: Treatment for adults who set fires relies upon valid and reliable assessment. Research is needed to ensure self-report measures are available for adults with neurodevelopmental disabilities and that they are robust.

Method: Qualitative and quantitative data from three rounds of a Delphi exercise with practitioners and a focus group discussion with adults with neurodevelopmental disabilities was used to generate consensus about the accessibility of item adaptations made to the Fire Interest Rating Scale (Murphy & Clare, 1996), Fire Attitudes Scale (Muckley, 1997), and the Identification with Fire Questionnaire (Gannon et al., 2011).

Results: Findings suggested the accessibility of current measures could be improved to better meet the needs of adults with neurodevelopmental disabilities and adaptations to all questionnaire items were needed.

Conclusion: Following feedback, revisions to current measures were implemented leading to the development of the Adapted Firesetting Assessment Scale with improved accessibility for adults with neurodevelopmental disabilities.

Key Words

Intellectual disabilities; Learning Disabilities; Autism; Neurodevelopmental Disabilities; Firesetting; Arson

Introduction

In England and Wales, deliberate fire setting is estimated to cost £1.45 billion per year (Arson Prevention Forum, 2017) with 69,846 incidents of deliberate fire setting resulting in 55 deaths and 485 non-fatal casualties in 2019 to 2020 (Home Office, 2020). Some of those who set fires will have neurodevelopmental disabilities (Collins et al., 2021a), and specifically, intellectual disabilities and/or autism. However, we know little about the actual prevalence of firesetting amongst this population. Nevertheless, practitioners across a variety of settings (such as prison, inpatient services, the community, probation services) will encounter adults with neurodevelopmental disabilities who have set a fire (e.g. Alexander et al., 2011; Chester et al., 2018). To provide effective treatment, practitioners seek to assess an individual's motivation for firesetting. However, barriers to assessment include a lack of information regarding the unique characteristics and treatment needs (including motivation) of adults with neurodevelopmental disabilities.

In a recent review of the evidence, Collins et al. (2021a) suggested that those with neurodevelopmental disabilities who set fires had several characteristics also common to people without these disabilities (e.g. being male, White, and of low socio-economic status). Other shared characteristics, which may have contributed to their risk of firesetting, included having a history of trauma, aggression, impulsivity, difficulties with relationships, and poor coping strategies. More specifically, those with neurodevelopmental disabilities had difficulties communicating with others, lacked appropriate support, had significantly lower self-esteem, and difficulties with assertiveness skills relative to those without these disabilities who set fires (Collins et al., 2021a). The authors went on to suggest that these additional factors are not reflected in current self-report measures for firesetting behaviour when they are used with those who have neurodevelopmental disabilities (Collins et al., 2021a).

Robust fire-related self-report measures for use with those with neurodevelopmental disabilities are needed to help inform individual case management in inpatient and community settings (Lindsay & Beail, 2004). Assessment can determine treatment need, inform level of risk

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(Marshall, 1996), clarify who is suitable for treatment, and index change following treatment (Keeling et al., 2007). However, adults with neurodevelopmental disabilities may have psychological vulnerabilities arising out of their condition, which warrant consideration (Gudjonsson, 2006). Self-report assessments require the respondent to understand the instructions, and to comprehend questions and the response format (Chester et al., 2015). The use of poorly adapted measures could have several implications including low response rates, high response bias, poor reliability, and poor validity (Finlay & Lyons, 2002; Gudjonsson & Joyce, 2011). In the absence of accessible, valid, and reliable measures, local services may develop or adapt their own assessments. The use of non-standardised measures for adults with neurodevelopmental disabilities may lead to difficulties in identifying treatment targets and planning interventions.

Current measures available to practitioners working with adults who set fires tend to focus upon characteristics likely to be associated with the risk of firesetting (e.g. Pathological Fire-Setters Interview, Taylor et al., 2004; Fire Attitudes Scale, Muckley, 1997; the Identification with Fire Questionnaire, Gannon et al., 2011; Fire Setting Scale, Gannon & Barrowcliffe, 2012; Firesetting Assessment Schedule, Murphy & Clare, 1996). Measures were developed to examine characteristics shown to be related to firesetting (i.e. antisocial behaviour and fire interest) and explore attitudes in relation to fire covering numerous situations and behaviours. However, the psychometric properties of current measures have not been sufficiently explored. The Fire Attitudes Scale (Muckley, 1997) has poor internal consistency ($\alpha = .64$; Barrowcliffe & Gannon, 2015). The Identification with Fire Questionnaire (Gannon et al., 2011) has acceptable internal consistency ($\alpha = .71$). However, it has only been evaluated using samples of adults without neurodevelopmental disabilities (Barrowcliffe & Gannon, 2015).

Few measures that have been developed specifically for adults with neurodevelopmental disabilities who set fires. The Northgate Firesetter Risk Assessment (NFRA; Taylor & Thorne, 2005) was developed from the HCR-20 (Webster et al., 1997) to incorporate a wide range of historical and clinical risk factors related to firesetting. However, the NFRA has not been published or empirically

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evaluated. The St Andrew's Fire and Arson Risk Instrument (SAFARI; Long et al., 2014) is a semi-structured interview examining the antecedents, behaviour, and consequences of firesetting as well as readiness to change, firesetting self-efficacy, perceived probability of future firesetting, barriers to change, and understanding of firesetting behaviours. The Fire Interest Rating Scale (FIRS; Murphy & Clare, 1996) was developed for use with adults with intellectual disabilities. Items focus on the use of fire to solve problems, the necessity of fire safety measures, and how common it is for people to set fires or be accused of having set a fire. Murphy & Clare (1996) found that when the FIRS was used with 10 adults with a learning disability admitted to a hospital facility for people with challenging behaviours, those who had set fires scored significantly higher compared to those who had not set a fire, which was indicative of having more fire interest (Murphy & Clare, 1996). The Firesetting Assessment Schedule (FASch; Murphy & Clare, 1996) examines the events, feelings, and cognitions prior to and after setting fires. However, large studies to validate and standardise fire specific measures for adults with neurodevelopmental disabilities have not been conducted.

There has been work in this area, but the majority of research has taken place with samples who do not have neurodevelopmental disabilities. O' Ciardha et al. (2015) examined the properties of the Fire Attitudes Scale, the Identification with Fire Questionnaire and The Fire Interest Rating Scale identifying four factors relevant to treatment needs of people without neurodevelopmental disabilities who set fires: (i) identification with fire, (ii) serious fire interest, (iii) poor fire safety, and (iv) firesetting as normal. Low to very good scale reliabilities (α s = .63 to .87) for each of the factors were reported. Area Under the Curve (AUC) for the four factors ranged from .580 to .650 with the strongest predictors of the factors being 'firesetting as normal' and 'serious fire interest' (Ó Ciardha et al., 2015). Using the original scales both the FIRS and the FAS significantly predicted group membership, with the FAS demonstrating the higher AUC; AUC = .689, SE = .04, $p < .001$, 95% CI [0.62, 0.76] (Ó Ciardha et al., 2015). Despite a lack of empirical evaluation, the FIRS (Murphy & Clare, 1996), FAS (Muckley, 1997), and to a lesser extent the Four Factor Fire Scale (Ó Ciardha et al., 2015) are currently used in practice when assessing adults with neurodevelopmental disabilities who set

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fires for treatment suitability and for therapeutic evaluation (Gannon et al., 2013; Gannon et al., 2015). However, research does not support the validity of these measures when used with those with neurodevelopmental disabilities, therefore limiting our knowledge, and understanding of firesetting behaviour. Nevertheless, the research by Ó Ciardha et al. (2015) suggested the fire specific factors (as measured by the Four Factor Fire Scale) need to be addressed when offering treatment. Consequently, and considering the increasing theoretical understanding in this area (Ó Ciardha et al., 2015), both researchers and practitioners would benefit from the development of empirically evaluated measures based on recent theories that can be used with those with neurodevelopmental disabilities who set fires, incorporating the additional treatment needs of this population (Collins et al., 2021a) and increasing validity. An adapted scale, which is empirically validated for this population would provide a useful resource for professionals, and ultimately better inform treatment need for this population.

Aims

The current study has the following aims:

1. To evaluate the accessibility of existing scales that appraise fire specific factors likely to be associated with firesetting behaviour for adults with neurodevelopmental disabilities.
2. To develop an accessible self-report scale to appraise the fire specific factors likely to be associated with firesetting behaviour informed by expert opinion obtained from a Delphi exercise.
3. To evaluate the assessment scale using a focus group discussion with adults with neurodevelopmental disabilities.

Method

Ethical Approval

The research study received Health Research Authority and a favourable opinion from the Social Care Research Ethics Committee (IRAS Project ID: 255255). Informed consent was obtained electronically prior to participation.

Stage 1: Delphi

This study employed the Delphi technique, a multistage process commonly used in medical, nursing, and health service research (e.g. Foyston et al., 2019; Hiriscau et al., 2016; Jorm, 2015). Like other researchers who have used a mixed methods Delphi design (e.g. Howarth et al., 2019), authors of the current study sought consensus on the opinion of 'experts' through a series of structured questionnaires completed anonymously. A qualitative element in the Delphi exercise was sought to obtain deeper and richer data to allow for greater understanding of reasoning behind responses, which were used to inform adaptations to questionnaire items. For the current study the Delphi technique was employed using email and online surveys to allow for experts from different geographical locations to be more easily involved.

Participants. Participants for the Delphi exercise were recruited using social media and professional contacts. Independent sector and NHS sites in England who provide community and/or inpatient specialised forensic services to adults with neurodevelopmental disabilities were also contacted and asked to distribute information about the study via email. A total of 19 experts completed round one (13 experts self-reported their gender as female and 6 reported their gender as male) aged between 25 and 60 ($M = 40.78$, $SD = 10.69$), 17 of whom completed round two and 15 of whom completed round three. This led to an overall attrition rate of 21%, which is no larger than is to be expected for a Delphi exercise (Walker & Selfe, 1996). Participants were eligible to participate if they were a registered healthcare professional or researcher and had experience working within services for adults with neurodevelopmental disabilities. No specific exclusion criteria were applied given the convenience sampling method. An intended sample size of ten experts was sought in line with

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Delphi recommendations (Linstone & Turoff, 2002; Murphy et al., 1998). Most experts (n = 17) were from the UK, one expert was from the Cayman Islands and one expert was from Australia. Although most experts were psychologists (n = 11), other roles included an academic in nursing and health (n = 1), psychiatrist (n = 1), hospital manager (n = 1), speech and language therapist (n = 1), and nurses (n = 4).

The majority of participants had over ten years of experience working with adults with neurodevelopmental disabilities (n = 12), and over five years of experience working with adults who had set a fire (n = 12) in areas of assessment, treatment, care planning, and/or research. One expert had no experience of working with adults who had set a fire but 20 years of experience working with adults with neurodevelopmental disabilities. A second expert - an academic in mental health nursing and health - had 15 years of experience researching firesetting behaviour.

Procedure. Eligible experts were contacted by email and invited to take part in the study. The invitation email included the rationale, intended aims of the Delphi exercise, and the web link to the survey. On opening the link, experts were provided with a hyperlink to the full information sheet and consent form containing further information about the study and the researchers contact details.

Round one. If respondents consented to continue, they were asked their age, gender, and to provide brief professional background information (i.e. job role, type of service they were working in, their experience of working with adults with neurodevelopmental disabilities, and their experience of working with adults who had set a fire, see Table 2-supplementary data). Next, experts were asked some general questions about the assessment of adults with neurodevelopmental disabilities, which included how long an assessment should take, what is required for an assessment to be accessible, the type of response an assessment should aim to achieve (i.e. quantitative, or qualitative data) and how many response options should be presented to adults with neurodevelopmental disabilities.

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Experts were then presented with each item from the Fire Interest Rating Scale (Murphy & Clare, 1996), Fire Attitudes Scale (Muckley, 1997), and the Identification with Fire Questionnaire (Gannon et al., 2011). Experts were asked to rate each of the 44 questionnaire items along a scale from 1 (not at all complex) to 3 (far too complex). When rating items, experts were encouraged to consider the complexity of the language used and whether adults with neurodevelopmental disabilities were likely to understand what was being asked of them. Where an item was rated 'a little complex' or 'far too complex' experts were encouraged to provide an explanation for their response and based on the results of round one, items were adapted. If 80% or more of participants rated the item 'not at all complex', it was considered suitable to retain, and was removed from the subsequent round of data collection.

Round two. Those who completed the first round were invited to take part in the second round of data collection. An email was sent to participants with a web link and a summary of findings from round one. On consenting to complete round two, experts were presented with a hyperlink to the adapted items. As with round one, experts were asked to rate items and were invited to provide further comments. In round two, if a consensus of 'not at all complex' was reached for an item, defined as 80% of participants choosing this response, it was considered suitable to retain, and was removed from the subsequent round of data collection.

Round three. The final round followed the same structure as round two. No more than three rounds of data collection were conducted, as this is considered an acceptable number to obtain sufficiently detailed feedback during a Delphi exercise (Chang et al., 2010). Items where at least 80% of participants did not rate them as "not at all complex", were further augmented based on the feedback given.

Analysis. Results of the Delphi exercise were downloaded in an anonymous format onto an encrypted computer. Descriptive methods were used to report findings. Frequency data were generated to describe the professional background of participants. Percentages were calculated to

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describe the ratings made in round one, two, and three. As previously stated, the consensus level for items rated using the scale for round two was set at 80% (i.e. 80% of experts rated the item 'not at all complex') based on guidelines reported by Hasson et al. (2000). Free text responses were used to inform changes made to assessment scale items leading to the development of the Adapted Firesetting Assessment Scale.

Stage 2: Focus Group

An online focus group, using Zoom video conferencing software, was used to further evaluate the items in the Adapted Firesetting Assessment Scale as the study took place during the coronavirus pandemic.

Participants. Three adults (2 identified as male and 1 identified as female) with neurodevelopmental disabilities participated in the focus group discussion. Of the three participants, two were diagnosed with Autism and one with Klinefelter syndrome (also referred to as XXY syndrome) and intellectual disability. All participants provided their informed consent to participate in the focus group discussion. Participants were recruited from the community, and where possible, because they had a history of setting fires ($n = 1$). Their mean age was 46.7 years, ranging from 37-54. All participants identified as White and British. One participant lived independently, one in supported accommodation and one with family.

Procedure. A convenience sample was used, whereby potential participants known to NHS sites or the University of XXXXX in their roles within the Research Advisory Group were contacted via email and invited to take part in the online focus group. Participants were given an information sheet, which was read aloud, and were given the opportunity to provide either written or verbal informed consent, which included permission to record the discussion. Questionnaire items were shared with participants over Zoom online conferencing software and they were asked to comment

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verbally on the clarity of the written text and pictures for each item, as well as the response format and overall impression of the questionnaire. The focus group discussion was led by the first author. The second and third authors were present throughout to support respondents, focus the conversations, and ensure all participants had an equal opportunity to contribute to discussions. For an item to be included in the final questionnaire a consensus in which all participants verbally agreed that the item was accessible was required.

Analysis. The focus group was recorded, and the number of items participants reported to be accessible was observed. Feedback from participants was used to inform the development of the proposed Adapted Firesetting Assessment Scale. Responses were kept confidential and any direct quotations were anonymized.

Results

The majority of participants reported that an assessment for adults with neurodevelopmental disabilities who set fires should consider an individual's strengths and challenges and take 20-30 minutes to complete. When asked how self-report measures for adults with neurodevelopmental disabilities could be improved, experts identified three main areas requiring improvement. These were sentence structure (i.e. sentences need to be concise and simple), language (i.e. language needs to be clear, simple, and without metaphors) and the additional need for visual aids to support understanding of instructions, questions, and rating scales. Experts also highlighted the importance of obtaining information from other sources (e.g. file review and family/carers). Most participants reported that adults with neurodevelopmental disabilities would benefit from having some structured response options in the form of a scale and of having the opportunity to elaborate on their responses. Most participants reported that to improve the accuracy of outcome data, scales should have no less than three response options and a maximum of five (see Table 2 and 3-supplementary data).

Round One

When experts were presented with the original items, feedback from round one of the Delphi exercise indicated that despite 14 items being rated 'not at all complex' by at least 80% of participants, 30 of the 44 items from the original scales were not accessible to adults with neurodevelopmental disabilities. Free text feedback suggested the need for visual prompts for all items, and gender-neutral terminology (i.e. 'firefighter' instead of 'fireman') or modernisation for others (e.g. 'lighter' instead of 'matches'). Authors felt a new scale needed to be developed, that was informed by expert opinion. Consequently, all 44 items were included for review in round two (see Table 5-supplementary data).

Round Two

Prior to round two, all 44 assessment scale items were adapted using feedback from round one (see Table 1). Round two then followed the same review procedure as round one. Findings indicated that 31 items were rated 'not at all complex' by at least 80% of participants, three items ('I do not need fire in my life', 'Fire makes me who I am', and 'Fire is a big part of who I am') were removed as they were too repetitive, and 10 items required further adaptations. Of the 10 items that were amended, the sentence structure for several was considered too complex. Several items contained a double negative. For example the item, 'If I did not see another fire again, I would be ok' was amended to, 'I would be ok If I never saw a fire again'. One item was amended to account for individuals who may have set a fire in a hospital environment rather than a community setting and several items were considered too abstract. These items referred to the concept of personal identity. For example 'Fire is a part of who I am' was amended to 'I describe myself as someone who sets fires' (see Table 5-supplementary data).

Round Three

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Following round two, 10 items had still been rated by over 20% of experts as either a 'little complex' or 'far too complex'. Therefore, round three followed the same review procedure as round two. Five items were rated 'not at all complex' by at least 80% of participants and one item was removed as it was considered too repetitive: 'I usually go along with what my mates decide' (see Table 5-supplementary data). Where free text feedback was provided, further adaptations to the remaining four items were made (see Table 1). Visual prompts were amended to better support understanding of the written text (e.g. police uniform was made clearer for the item 'The police talk to lots of people about setting fires') and language further clarified (e.g. the word 'set' was replaced with the word 'start' for the item; 'I would describe myself as someone who sets fires').

Table 1

Amendments made to items and rationale

[Insert Table 1]

Focus Group

Participants reviewed each item of the Adapted Firesetting Assessment Scale and agreed that 23 of the 41 items were accessible and that the images supporting the text aided understanding of items. Following discussion, participants reached a consensus on the remaining 18 items and their recommendations were used to make final amendments leading to a further refined version of the Adapted Firesetting Assessment Scale (see Appendix A).

Broad categories identified in participant discussions about questionnaire items included, the usefulness of pictorial content, the clarity of written text, and the questionnaire item response options. Feedback concerning the clarity of pictures used to support understanding for questionnaire items include the importance of using familiar emojis to represent emotional states and the use of colour to enhance images. These recommendations led to several amendments to the assessment. Primary colours were added to visual prompts to support understanding of the written

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text. For example, blue, red, and yellow were added to the image of the fire engine to support the written text for the following item, 'Watching a fire engine come down the road' and red was added to all images of a fire extinguisher. A Likert scale representing a broader range of emotions was used and the response options were amended from 'upset/scared', 'ok' and 'excited/fun' to 'very upset/scared', 'a little upset', 'ok', and 'excited/fun'. Other recommendations included simplifying words (e.g. the words 'low', 'moderate', 'substantial' and 'critical' were amended to 'low', 'medium' and 'high' to support understanding of the item 'I need fire in my life'). Recommendations to improve the accuracy of visual prompts were implemented for several items including 'I have put a fire out', which was amended from being an image of a fire extinguisher next to ashes on the ground to a fire being extinguished by a person. Other recommendations included adding a red triangle with an explanation mark to the item 'Playing with a lighter can be dangerous' and amending the visual prompt for the item, 'People who set fires should be sent to prison' to show the face and body of an unhappy person behind bars. Lastly, participants raised concerns that some questionnaire items were too suggestive, commenting that the use of a green thumbs up to represent happy may prompt a respondent to automatically agree with the questionnaire item. This led authors to remove the green thumbs up from one visual prompt.

Discussion

Within this study, we adapted an assessment of fire specific factors that was informed by expert opinion and evaluated by participants from the population for whom its use is intended. At stage one, findings suggested current measures (focused on fire specific factors) were not accessible for adults with neurodevelopmental disabilities. Consequently, a preliminary self-report scale was created specifically for adults with neurodevelopmental disabilities and was informed by experts over three rounds of a Delphi exercise. At stage two, feedback from three adults with neurodevelopmental disabilities during a focus group discussion highlighted additional areas for improvement to enhance the comprehensibility of the preliminary scale. Findings from the Delphi

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exercise at stage one and the focus group discussion as stage two led to the development of the Adapted Firesetting Assessment Scale.

In 2015, Ó Ciardha et al. developed the four-factor fire scale, measuring identification with fire, serious fire interest, firesetting as normal, and poor fire safety. Their findings suggested the fire related factors need to be addressed when offering treatment to adults without neurodevelopmental disabilities. However, research focused on identifying and measuring fire related factors associated with deliberate firesetting behaviour for adults with neurodevelopmental disabilities is still very much in infancy. Nevertheless, the original scales that contributed towards the development of the Four Factor Fire Scale are being used within services to inform treatment and intervention plans for adults with neurodevelopmental disabilities. Prior to the current study, questionnaire items had not been adapted, and the validity and reliability of the Four Factor Fire Scale when used with adults with neurodevelopmental disabilities remains untested. Therefore, an adapted scale, grounded in evidence pertaining to the fire related factors specific to adults with neurodevelopmental disabilities (e.g. fire interest), may inform treatment need for this population and may contribute towards improvements in evidence-based practice. The current study provides some preliminary validation for the Adapted Firesetting Assessment Scale and represents the first step towards developing an adapted measure to assess the fire specific treatment needs of adults with neurodevelopmental disabilities.

Nevertheless, when developing an accessible self-report scale, the importance of acknowledging the individual needs of adults with neurodevelopmental disabilities was highlighted by experts during the Delphi exercise, particularly regarding the time an assessment should take to complete. Findings emphasised that adults with neurodevelopmental disabilities should be provided with an opportunity to elaborate on their responses, suggesting they should be assessed using a more structured self-report scale alongside other forms of information gathering (e.g. file review, interview, third party information). A preference of between 20 and 30 minutes for the duration of an assessment was surprising given the devastating seriousness of the implications for both

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perpetrators and victims. Although, this might reflect the need to assess multiple factors associated with firesetting behaviour, which do also warrant exploration during the assessment and treatment of adults with neurodevelopmental disabilities (e.g. social skills, problem-solving skills, coping strategies, self-esteem; Collins et al., 2021a).

In the current study, 10.5% of practitioners felt that adults with neurodevelopmental disabilities should be given a choice of seven or more response options. However, feedback from adults with neurodevelopmental disabilities during the focus group discussion, and accepted guidance for materials used by adults with intellectual disabilities suggested that between three and four response options are optimal when working with this population (Hartley & MacLean, 2006). These findings therefore raise concerns that despite professionals having extensive experience working with adults with neurodevelopmental disabilities, some may still lack awareness and knowledge of some of the challenges experienced by these individuals. Alternatively, it could reflect the different needs of autistic adults, compared to autistic adults who also have intellectual disabilities. When prompted for additional comments, experts also failed to highlight other factors relevant to firesetting behaviour of adults with neurodevelopmental disabilities. Participants may also have been influenced by the original scale items, which excluded factors associated with psychosis (e.g. auditory hallucinations) or unique motivations to set a fire, including to cause change (such as move accommodation) or communicate a need for more support (Collins et al., 2021b). Despite consensus being met on scale items and experts having the opportunity to provide additional feedback to inform future adaptations, items that required adults with neurodevelopmental disabilities to understand more abstract concepts (i.e. personality and self) continued to be particularly difficult to adapt.

Overall, the participants in the focus group provided positive feedback regarding the accessibility of scale items and contributed towards the scale development (suggesting amendments to the language, visual prompts, and number of response options). Some types of validity remain untested and need to be investigated in future studies. The evaluation of the Adapted Firesetting

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Assessment Scale using a focus group discussion highlighted the need to involve adults with neurodevelopmental disabilities in the development of assessment measures.

Limitations

Experts were recruited from a range of inpatient and community services and encouraged to share the invitation to participate in the research with relevant colleagues. However, it is likely the invitation to participate did not reach all eligible practitioners, and a stronger drive using alternative methods (e.g. emails to additional online lists of registered practitioners such as JISC-ID, a national academic mailing list service) may have increased the sample size. A small sample of three adults with neurodevelopmental disabilities, considered to be the minimum group size for a focus group (Edmunds, 1999) could be construed as problematic. The recruitment of participants who were able to take part in the study online proved challenging as this part of the study was conducted during the COVID-19 lockdown restrictions in England (2020-2021). However, running a focus group with three people may have allowed participants a greater opportunity to engage with the material and make valued contributions as taking part in a larger focus group may have placed greater demands upon individuals. Nevertheless, the generalisability of the findings from the current study are limited, and further views from people with neurodevelopmental disabilities should be captured in further validation work. This study provides a sound basis for researchers and practitioners on which to base further research and incorporate future developments in the field.

Alongside this, it is important to acknowledge that the validity of the assessment of factors associated with deliberate firesetting, could be improved using alternative methods to support assessment that are less reliant on accurate self-reported recall of thoughts, feelings, and behaviours. Such examples include visiting a fire station (Clare et al., 1992), the use of virtual reality technology, videos, measures of heart rate, and blood pressure. Alternative methods of assessment have been used in other areas of offending behaviour (e.g. sexual offending; Boardman & Bartels, 2018; Trottier et al., 2019; Koegl et al., 2018) and research into the assessment of firesetting is still in

its infancy. Although consideration should be given to the disadvantages of using physiological measures, which are difficult to interpret, and the ethical implications of using virtual reality technology (e.g. its validity, cost, physical discomfort, psychological and emotional side effects, and data security; Cornet & Van Gelder, 2020).

Implications for policy and practice

The current study highlights the need to develop self-report measures specifically for adults with neurodevelopmental disabilities who present with firesetting behaviour using samples of those who will use the measure, specifically practitioners and adults with neurodevelopmental disabilities. The needs of this group during assessment may include additional visual material to aid understanding of the written text, structured response options, and flexibility in the time given to complete the assessment. Furthermore, the use of complex sentence structures and language, abstract concepts, and double negatives are unhelpful, impeding the ability to understand what is being asked and increasing the likelihood of an inaccurate and unreliable response. Although further empirical evaluation in the form of a pilot study and future factor analytic work is required, findings of the current study suggest the Adapted Firesetting Assessment Scale is a resource that may be used to inform future research, assessment, treatment, and care planning for this group of adults who set fires.

References

- Alexander, R., Hiremath, A., Chester, V., Green, F., Gunaratna, I., & Hoare, S. (2011). Evaluation of treatment outcomes from a medium secure unit for people with intellectual disability. *Advances in Mental Health and Intellectual Disabilities, 5*(1), 22. <https://doi.org/10.5042/amhid.2011.0013>
- Arson Prevention Forum. (2017). *State of the Nation Report*. <http://www.stoparsonuk.org/arson/documents/Arson-Prevention-Forum-Booklet.pdf>
- Barrowcliffe, E. R., & Gannon, T. A. (2015). The characteristics of un-apprehended firesetters living in the UK community. *Psychology, Crime & Law, 21*(9), 836-853. <https://doi.org/10.1080/1068316X.2015.1054385>
- Boardman, K. A., & Bartels, R. M. (2018). Using video stimuli to examine judgments of nonoffending and offending pedophiles: A brief communication. *Journal of Sex & Marital Therapy, 44*(4), 333-342. <https://doi.org/10.1080/0092623X.2017.1405300>
- Chang, A. M., Gardner, G. E., Duffield, C., & Ramis, M. A. (2010). A Delphi study to validate an advanced practice nursing tool. *Journal of Advanced Nursing, 66*(10), 2320-2330. <https://doi.org/10.1111/j.1365-2648.2010.05367.x>
- Chester, V., McCathie, J., Quinn, M., Ryan, L., Popple, J., Loveridge, C., & Spall, J. (2015). Clinician experiences of administering the Essen Climate Evaluation Schema (EssenCES) in a forensic intellectual disability service. *Advances in Mental Health & Intellectual Disabilities, 9*(2), 70-78. <https://doi.org/10.1108/AMHID-06-2014-0024>
- Chester, V., Völlm, B., Tromans, S., Kapugama, C., & Alexander, R. T. (2018). Long-stay patients with and without intellectual disability in forensic psychiatric settings: comparison of characteristics and needs. *BJPsych Open, 4*(4), 226-234. <https://doi.org/10.1192/bjo.2018.24>
- Clare, I. C. H., Murphy, G. H., Cox, D., & Chaplin, E. H. (1992). Assessment and treatment of fire-setting: A single-case investigation using a cognitive-behavioural model. *Criminal Behaviour & Mental Health, 2*(3), 253-268. <https://doi.org/10.1002/cbm.1992.2.3.253>

ADAPTED FIRESETTING ASSESSMENT

- Collins, J., Barnoux, M., & Langdon, P. (2021a). Adults with intellectual disabilities and autism who deliberately set fires: A systematic review. *Aggression & Violent Behaviour*. 101545.
<https://doi.org/10.1016/j.avb.2020.101545>
- Collins, J., Barnoux, M., & Langdon, P. E. (2021b). A preliminary firesetting offence chain for adults with intellectual and other developmental disabilities [Manuscript submitted for publication]. Tizard Centre, University of Kent.
- Cornet, L. J., & Van Gelder, J. L. (2020). Virtual reality: a use case for criminal justice practice. *Psychology, Crime & Law*, 26(7), 631-647. <https://doi.org/10.1080/1068316X.2019.1708357>
- Edmunds, H. (1999). *The Focus Group Research Handbook*. Illinois: NTC.
- Finlay, W. M., & Lyons, E. (2002). Acquiescence in interviews with people who have mental retardation. *Mental Retardation*, 40, 14–29. [https://doi.org/10.1352/0047-6765\(2002\)040<0014:AllWPW>2.0.CO;2](https://doi.org/10.1352/0047-6765(2002)040<0014:AllWPW>2.0.CO;2)
- Foyston, Z., Taylor, C., & Freestone, M. (2019). “Who needs secure services for personality disorder?” Results of an expert Delphi study with professional staff. *BMC Psychiatry*, 19(1), 1-12. <https://doi.org/10.1186/s12888-019-2268-3>
- Gannon, T. A., & Barrowcliffe, E. (2012). Firesetting in the general population: the development and validation of the fire setting and fire proclivity scales. *Legal & Criminological Psychology*, 17(1), 105-122. <https://doi.org/10.1348/135532510X523203>
- Gannon, T. A., Ó Ciardha, C., & Barnoux, M. F. L. (2011). *The Identification with Fire Questionnaire* [Unpublished manuscript]. CORE-FP, School of Psychology, University of Kent.
- Gannon, T., Ó Ciardha, C., Barnoux, M., Tyler, N., Mozova, K., & Alleyne, E. (2013). Male imprisoned firesetters have different characteristics to other imprisoned offenders and require specialist treatment. *Psychiatry: Interpersonal & Biological Processes*, 76(4), 349-364.
<https://doi.org/10.1521/psyc.2013.76.4.349>
- Gannon, T. A., Alleyne, E., Butler, H., Danby, H., Kapoor, A., Lovell, T., ... & Ciardha, C. Ó. (2015). Specialist group therapy for psychological factors associated with firesetting: evidence of a

treatment effect from a non-randomized trial with male prisoners. *Behaviour Research & Therapy*, 73, 42-51. <https://doi.org/10.1016/j.brat.2015.07.007>

Gudjonsson, G. H. (2006). *The psychological vulnerabilities of witnesses and the risk of false accusations and false confessions*. In A. Heaton-Armstrong, E. Shepherd, G. Gudjonsson, & D. Wolchover (Eds.), *Witness testimony. Psychological, investigative and evidential perspectives* (pp. 61–75). Oxford: Oxford University Press.

Gudjonsson, G., & Joyce, T. (2011). Interviewing adults with intellectual disabilities. *Advances in Mental Health & Intellectual Disabilities*, 5(2), 16-21. <https://doi.org/10.5042/amhid.2011.0108>

Hartley, S. L., & MacLean Jr, W. E. (2006). A review of the reliability and validity of Likert-type scales for people with intellectual disability. *Journal of Intellectual Disability Research*, 50(11), 813-827. <https://10.1111/j.1365-2788.2006.00844.x>

Hasson, F., Keeney, S., & McKenna, H. (2000). Research guidelines for the Delphi survey technique. *Journal of Advanced Nursing*, 32(4), 1008-1015. <https://doi.org/10.1046/j.1365-2648.2000.t01-1-01567.x>

Hiriscau, E. I., Stingelin-Giles, N., Wasserman, D., & Reiter-Theil, S. (2016). Identifying ethical issues in mental health research with minors adolescents: results of a Delphi study. *International Journal of Environmental Research & Public Health*, 13(5), 489. <https://doi.org/10.3390/ijerph13050489>

Home Office. (2020). *Detailed Analysis of Fires Attended by Fire and Rescue Services in England*. <https://www.gov.uk/government/statistical-data-sets/fire-statistics-data-tables>

Howarth, E., Vainre, M., Humphrey, A., Lombardo, C., Hanafiah, A. N., Anderson, J. K., & Jones, P. B. (2019). Delphi study to identify key features of community-based child and adolescent mental health services in the East of England. *BMJ Open*, 9(6), 1-16. <http://dx.doi.org/10.1136/bmjopen2018-022936>

ADAPTED FIRESETTING ASSESSMENT

- Jorm, A. F. (2015). Using the Delphi expert consensus method in mental health research. *Australian & New Zealand Journal of Psychiatry, 49*(10), 887-897.
<https://doi.org/10.1177/0004867415600891>
- Keeling, J. A., Beech, A. R., & Rose, J. L. (2007). Assessment of intellectually disabled sexual offenders: the current position. *Aggression and Violent Behavior, 12*(2), 229-241.
<https://doi.org/10.1016/j.avb.2006.08.001>
- Koegl, C. J., Farrington, D. P., & Raine, A. (2018). The relationship between low resting heart rate, systolic blood pressure and antisocial behavior in incarcerated males. *Journal of Criminal Justice, 55*, 88-95. <https://doi.org/10.1016/j.jcrimjus.2018.02.004>
- Lindsay, W. R., & Beail, N. (2004). Risk assessment: Actuarial prediction and clinical judgement of offending incidents and behaviour for intellectual disability services. *Journal of Applied Research in Intellectual Disabilities, 17*(4), 229-234. <https://doi.org/10.1111/j.1468-3148.2004.00212.x>
- Linstone, H. A., & Turoff, M. (2002). *General applications: introduction*. In *The Delphi Approach: Techniques and Applications*, Turoff, M., & Linstone, H. A. (eds). Addison-Wesley Publishing Company Inc.: Reading, MA; 71–79. <http://www.is.njit.edu/pubs/delphibook>.
- Long, C. G., Banyard, E., Fulton, B., & Hollin, C. R. (2014). Developing an assessment of fire-setting to guide treatment in secure settings: The St Andrew's fire and arson risk instrument (SAFARI). *Behavioural & Cognitive Psychotherapy, 42*(5), 617-628.
<https://doi.org/10.1017/S1352465813000477>
- Marshall, W. L. (1996). Assessment, treatment, and theorizing about sex offenders: Developments during the past twenty years and future directions. *Criminal Justice & Behavior, 23*(1), 162-199. <https://doi.org/10.1177/0093854896023001011>
- Muckley, A. (1997). *Firesetting: Addressing Offending Behaviour*. Redcar and Cleveland Psychological Service, Redcar, Cleveland.

ADAPTED FIRESETTING ASSESSMENT

Murphy, G. H., & Clare, C. (1996). Analysis of motivation in people with mild learning disabilities (mental handicap) who set fires. *Psychology, Crime & Law*, 2(3), 153-164.

<https://doi.org/10.1080/10683169608409774>

Murphy, M. K., Black, N. A., Lamping, D. L., McKee, C. M., Sanderson, C. F. B., Askham, J., et al. (1998). Consensus development methods and their use in clinical guideline development.

Health Technol Assess, 2, 1–88. <https://doi.org/10.3310/hta2030>

O' Ciardha, C., Tyler, N., & Gannon, T. A. (2015). A practical guide to assessing adult firesetters' fire-specific treatment needs using the four factor fire scales. *Psychiatry*, 78(4), 293-304.

<https://doi.org/10.1080/00332747.2015.1061310>

Taylor, J.L. & Thorne, I. (2005). *Northgate Firesetter Risk Assessment*. Unpublished manual: Northumberland, Tyne & Wear NHS Foundation Trust.

Taylor, J. L., Thorne, I., & Slavkin, M. L. (2004). Treatment of fire-setting behaviour. *Offenders with Developmental Disabilities*, 3, 221. <https://doi.org/10.1002/9780470713440.ch12>

Trottier, D., Goyette, M., Benbouriche, M., Renaud, P., Rouleau, J. L., & Bouchard, S. (2019). *Using Virtual Reality with Child Sexual Offenders: Assessing Deviant Sexual Interests*. In *Virtual Reality for Psychological and Neurocognitive Interventions* (pp. 209-225). Springer, New York, NY. Chicago. https://doi.org/10.1007/978-1-4939-9482-3_9

Walker, A. M., & Selfe, J. (1996). The Delphi method: a useful tool for the allied health researcher. *British Journal of Therapy & Rehabilitation*, 3(12), 677-681.

<https://doi.org/10.12968/bjtr.1996.3.12.14731>

Webster, C. D., Douglas, K. S., Eaves, D., & Hart, S. D. (1997). HCR-20. *Assessing the risk of violence. Version, 2*.

ADAPTED FIRESETTING ASSESSMENT

Table 1

Amendments made to items and rationale

Original Item	Amended Item	Rationale for amendment
Fire is an important part of my identity	Fire is very important to me	Identity as an abstract concept was considered difficult to understand.
I don't need fire	I do not need fire in my life	Items removed as repetitive.
Fire is almost part of my personality	I would describe myself as someone who starts fires	Personality as an abstract concept was considered difficult to understand.
If I never saw another fire again it wouldn't bother me	I would be ok if I never saw a fire again	Removal of double negative.
Fire is an important part of my life	Fire is a big part of my life	Smaller words used, which could be more easily depicted in a visual prompt.
I don't know who I am without fire	Fire makes me who I am	Item removed as repetitive.
I need fire in my life	<i>No changes to text.</i>	Visual prompt added only.
Without fire, I am nobody	Fire is a big part of who I am	Item removed as repetitive.
Fire is a part of me	I am nobody without fire (e.g. nobody notices me)	Removal of abstract concept.
I have to have fire in my life	I must have fire in my life	Avoiding repetition of the verb 'have'.
Most people carry a box of matches or a lighter around	Most people carry a lighter with them	Outdated reference to 'matches'.
People often set fires when they are angry	<i>No changes to text.</i>	Visual prompt added only.
I would like to work as a fireman	I would like to work as a firefighter	Gender neutral terminology.
The best thing about fire is watching it spread	I like watching fires get bigger	Complex language (i.e. 'spread') simplified.
I have never put a fire out	I have put a fire out	Removal of double negative.
I know a lot about how to prevent fires	I know a lot about how to stop a fire	Removal of more complex language (i.e. 'prevent').
Setting just a small fire can make you feel a lot better	Setting a small fire can make you feel better	Shorter sentence structure preferred.
Fires can easily get out of control	I can stop a fire from getting too big	Terms needed to be better defined (i.e. 'out of control').
I get bored very easily in my spare time	I get bored easily	Words removed to simply sentence, making the item more concise.
People who set fires should be locked up	People who set fires should be sent to prison	Terms needed to be better defined and less abstract (i.e. 'locked up').
When you're with your mates you act now and think later	I often copy what my friends do without thinking	Contradiction removed and sentence simplified.
If you've got problems, a small fire can help sort them out	If you have problems, a small fire can help you sort them out	Less complex language used.
Most families have had a fire accident at home	Most people have had an accident at home/in hospital that involved fire	Item considered too ambiguous and irrelevant to adults in hospital, prison or other environment outside of a family home.
Parents should spend money on buying a fire extinguisher	Parents/carers should spend money on buying a fire extinguisher	Item irrelevant to adults not in contact with their parents.

ADAPTED FIRESETTING ASSESSMENT

Most people have set a few small fires just for fun I usually go along with what my mates decide Playing with matches can be very dangerous Most people have been questioned about fires by the police They should teach you about fire prevention at school Most people's friends have lit a fire or two Having a box of matches in your pocket Watching an ordinary coal fire burn in a grate Watching a bonfire outdoors, like on bonfire night Seeing firemen get their equipment ready Watching a fire engine come down the road Striking a match to light a cigarette Watching a house burn down Going to a police station to be questioned about fire Watching people run from a fire Watching a person with his clothes on fire Striking a match to set fire to a building Seeing a hotel on fire in the TV news Seeing firemen hosing a fire Giving matches back to someone	Most people have set a small fire for fun I usually copy what my friends do Playing with a lighter can be dangerous The police talk to lots of people about setting fires They should teach you how to stop fires at school Most people's friends have started a fire or two Having a lighter in my pocket Watching fire burn in a fireplace Watching a bonfire on fireworks night Seeing a firefighter put their uniform on (e.g. helmet) <i>No changes to text.</i> Using a lighter to start a cigarette <i>No changes to text.</i> Being questioned by the police about a fire that has happened in the neighbourhood. <i>No changes to text.</i> Watching a person with their clothes on fire Using a lighter to set fire to a building Seeing a building on fire in the news Seeing a firefighter use water to put a fire out Giving a lighter back to someone	Words removed to simplify sentence. Sentence and language simplified. The term 'copy' was considered less abstract. Sentence simplified and item updated. Language simplified. Language simplified. Language simplified. Item updated. Item updated. Sentence simplified. Gender neutral terms used. Terms better defined (i.e. equipment). Visual prompt added. Item updated. Visual prompt added. Item required more context. Visual prompt added. Gender neutral terms used. Item updated. Item updated as the news can be viewed on a range of platforms, including TV, computer, phone. The term hose was considered unfamiliar, and the language was simplified. Item updated.
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Appendix A.

Adapted Firesetting Assessment Scale



We are going to read a number of statements

together



You will be asked if you agree or disagree with each statement



Agree



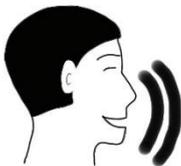
Disagree



There is no right or wrong answer



Please ask if you have a question



Please tell me if you do not understand

 Fire is very important to me.

Agree Not Sure Disagree

 I would be happy if I never saw a fire again

Agree Not Sure Disagree

 Fire is a big part of my life

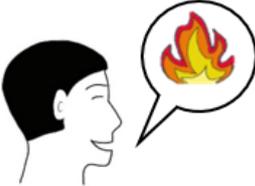
  

Agree Not Sure Disagree

 I need fire in my life

Agree Not Sure Disagree

 I would describe myself as someone who starts fires

Agree Not Sure Disagree

 I am nobody without fire
(e.g. nobody notices me)

Agree Not Sure Disagree

 I must have fire in my
life

Agree Not Sure Disagree

 Most people carry a
lighter with them

Agree Not Sure Disagree

 People often set fires
when they are angry

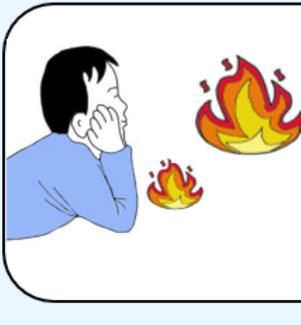
  

Agree Not Sure Disagree

 I would like to work as a
firefighter

Agree Not Sure Disagree



I like watching fires get bigger



Agree



Not Sure



Disagree



I have put a fire out



Agree



Not Sure



Disagree



They should teach you how to stop fires at school



Agree



Not Sure



Disagree



Most people's friends have started a fire or two



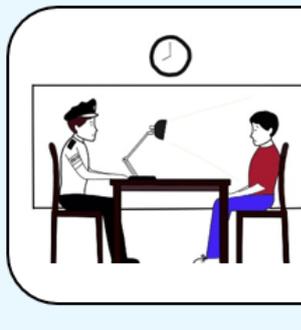
Agree



Not Sure



Disagree



The police talk to lots of people about setting fires



Agree



Not Sure



Disagree



I know a lot about how to stop a fire



Agree



Not Sure



Disagree



Setting a small fire can make you feel better



Agree



Not Sure



Disagree



I can stop a fire from getting too big



Agree



Not Sure



Disagree



I get bored easily



Agree



Not Sure



Disagree



People who set fires should be sent to prison



Agree



Not Sure



Disagree



I often copy what my friends do without thinking



Agree



Not Sure



Disagree



If you have problems, a small fire can help you sort them out



Agree



Not Sure



Disagree



Most people have had an accident at home/in hospital that involved fire



Agree



Not Sure



Disagree



Parents/carers should spend money on buying a fire extinguisher



Agree



Not Sure



Disagree



Most people have set a small fire for fun



Agree



Not Sure



Disagree

 I usually copy what my friends do

Agree Not Sure Disagree

 Playing with a lighter can be dangerous

Agree Not Sure Disagree



We are going to read a number of statements together



You will be asked to rate how you would feel in the following situations.



Very upset/scared



A little upset



OK



Excited/fun



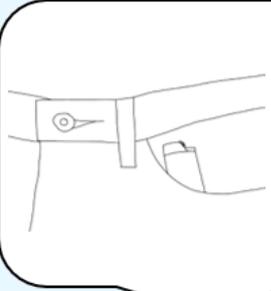
There is no right or wrong answer



Please ask if you have a question

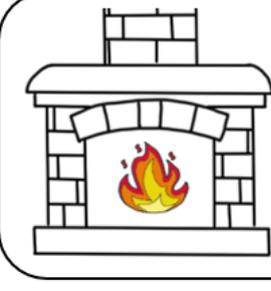


Please tell me if you do not understand



Having a lighter in my pocket

			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Very upset Scared	Little upset Scared	OK	Excited Fun



Watching fire burn in a fireplace

			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Very upset Scared	Little upset Scared	OK	Excited Fun



Watching a bonfire on fireworks night

			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Very upset Scared	Little upset Scared	OK	Excited Fun



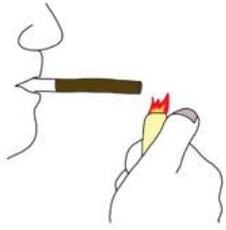
Seeing a firefighter put their uniform on (e.g. helmet)

			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Very upset Scared	Little upset Scared	OK	Excited Fun



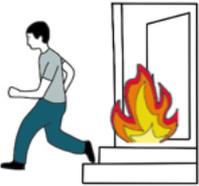
Watching a fire engine come down the road

			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Very upset Scared	Little upset Scared	OK	Excited Fun

 <p>Using a lighter to start a cigarette</p>				
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Very upset Scared	Little upset Scared	OK	Excited Fun

 <p>Watching a house burn down</p>				
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Very upset Scared	Little upset Scared	OK	Excited Fun

 <p>Being questioned by the police about a fire that has happened in the neighbourhood</p>				
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Very upset Scared	Little upset Scared	OK	Excited Fun

 <p>Watching people run from a fire</p>				
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Very upset Scared	Little upset Scared	OK	Excited Fun

 <p>Watching a person with his/her clothes on fire</p>				
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Very upset Scared	Little upset Scared	OK	Excited Fun

 Using a lighter to set fire to a building

			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Very upset Scared	Little upset Scared	OK	Excited Fun

 Seeing a building on fire in the news

			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Very upset Scared	Little upset Scared	OK	Excited Fun

 Seeing a firefighter use water to put a fire out

			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Very upset Scared	Little upset Scared	OK	Excited Fun

 Giving a lighter back to someone

			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Very upset Scared	Little upset Scared	OK	Excited Fun