

Understanding the Role of Uncertainty and Anxiety in Police Decision-Making during the Investigation of Sudden Unexpected Deaths in Children

Abstract

Existing policing policy offers a rational approach to decision-making with minimal reference to human judgment within child death investigations. This study adopted a mixed methodology to capture decisional processes of 26 serving Detective Inspectors and Detective Sergeants whilst responding to an immersive scenario which simulated the first hours of a *Sudden and Unexpected Death in Children* (SUDC) investigation. Participants were presented with four decision points, during which they were asked to choose from decision options while reflecting upon personal and situational factors influencing that decision. Thematic analysis of responses found that investigators disclosed ‘anxiety’ and ‘uncertainty’ throughout their decision-making during the scenario. In addition, there was no evidence of investigators utilising the models formally advocated within policing literature to make their decisions and assessments. As a result, it is suggested that further improvements are made regarding investigative decision-making models within operational policing where ‘anxiety’ and ‘uncertainty’ is heightened.

Key words: criminal investigation; decision making; child death; policing; Sudden Unexpected Deaths in Children

INTRODUCTION

Sudden Unexpected Death in Children (SUDC) is defined as:

‘...all cases in which there is death of a child, which would not have been reasonably expected to occur 24 hours previously and in whom no pre-existing medical cause of death is apparent.’ (The Royal College of Pathologists; p.11).

SUDC is the leading cause for infant mortality in the UK annually (Duncan and Byard, 2018). For example, in 2018 there were 230 unexplained (no cause found after post-mortem) infant and toddler deaths in the UK (ONS, 2020b). SUDC encompasses all child deaths irrespective of whether the initial circumstances indicate criminal activity. Because of the unnatural aspects of sudden child death, this has led to the development of comprehensive multi-agency responses where the police play a key role. The police lead investigator, typically of the rank of Detective Inspector, manages the initial response, ensuring that key tasks such as a joint examination (with a paediatrician) of the child as well as a comprehensive forensic examination of the home address are carried out. Simultaneously, the lead investigator must remain vigilant for the possibility of criminal offences including murder.

When considering criminal offences that investigators may face, on average in the UK a child (under the age of 15) is killed once a week (Office for National Statistics, 2019). When examining Office for National Statistics (ONS) homicide statistics, child homicides are most commonly (31%) perpetrated by the child’s parent or stepparent (ONS, 2020a). In respect to child death due to neglect/abuse, Brandon *et al.* (2020)

examined 206 serious case reviews in England from 2014-2017 and found 51% of child deaths were related to, but not directly caused by, maltreatment (including sudden unexpected death in infancy and suicide). Similar statistics have also been found in Northern Ireland (see: Devaney *et al.*, 2013) and Scotland (see: Care Inspectorate, 2020).

As such, the investigation of all SUDC poses unique challenges for police investigators for a variety of reasons. In child homicides specifically, Marshall (2012) highlighted that investigators must possess specialist technical knowledge about differing post-mortem presentations in children while having less forensic evidence to rely upon compared to adult homicide investigations. Further, Cook and Tattersall (2008) contended that often there is a heavy reliance on specialist medical expert evidence in child abuse homicides compared to adult cases. Besides the unique medical, forensic, and physiological challenges that are present in child death investigations; child death is traumatic in nature for surviving family members, first responders and investigators. ACPO (2014) outlines that police investigators need to balance an investigative mindset with a compassionate approach for grieving parents when dealing with SUDC, however the emotional impact on investigators is not addressed. For example, Roach *et al.* (2018) drew a link between the heightened vulnerability of child victims and increased emotional impact on investigators. Further, Roach *et al.* (2017) emphasised the necessity for child death investigators to specifically be made aware of cognitive biases that are likely to occur during this type of investigation and to be offered a full reflective discussion opportunity six months after completion of SUDC investigation because of the distinct emotional impact of these cases. This connects with the current major discussions of police wellbeing. Dealing with such emotionally impactful cases may

affect the long-term wellbeing of the officers involved and result in psychological ill health, trauma and stress related absences (Cartwright and Roach, 2021).

Despite this, there currently exists several unknowns about what factors influence investigator decision-making in SUDC investigations specifically. There is scant research on this topic generally, potentially owing to the challenge of research access. Further, there are significant issues regarding practitioner policy guidance on decision-making during these investigations. As such, this study specifically examined how personal and situational factors impacted police investigators decision-making in a simulated child death investigation environment.

Current Policy for Decision Making during Child Death Investigations

Investigative decision-making processes in British policing have been given relatively little focus within police training programmes, or within policy and procedure. This has often left investigators with little procedural guidance on how decisions should be made in child death investigations. The ‘Murder Investigation Manual’, published by the *National Centre for Policing Excellence* (also known as Centrex) in 2006, is still used as official guidance for homicide investigators, but makes little reference to the decision-making aspect of investigation (i.e., only ten lines allocated from a total of 301 pages). In addition, the manual includes a single diagram setting out a linear ‘Model of Idealised Investigative Decision-Making Process’ (attributed to Dick Oldfield, Police Research Group, 1998). There is no reference within this model to the complexities of decision-making although the ‘Murder Investigation Manual’ does recommend consulting another Centrex publication: ‘ACPO (2006) Practice Advice on

Core Investigative Doctrine’. This document has been superseded by a 2012 edition although both have since been formally decommissioned and have been replaced by the ‘College of Policing Authorised Professional Practice on Investigations’. This provides online guidance for police investigators and makes no reference to decision-making processes beyond stating the requirement to make decisions at key points within investigations and to maintain appropriate records of those decisions.

In terms of broader applications for decision-making across policing, the College of Policing (2014) recommends the National Decision Model (NDM, see: figure 1 below). Dymond (2014) described this cyclical process as “...a model promoting logical, step-by-step assessment and review of decision making” (p.168). This process requires officers to apply a series of considerations to information/intelligence, culminating the execution of selected actions, the result(s) of which can be resubmitted to the model for a fresh process of consideration.

[Insert Figure 1 near here]

Dando and Ormerod (2017) observed that the NDM is limited in that it is “descriptive and procedural” (p.1188), mandating consideration of six key elements to progress to a decision-making conclusion, without considering the broader issues of emotional responses and underlying cognitive processes. Notably within the relevant section of the College of Policing website there are no academic references for the NDM and no explanation for its origins other than it has been introduced on the basis that it is “...suitable for all decisions and should be used by everyone in policing” (College of Policing, 2014). In addition, it is noteworthy that subsequent academic commentary on

the NDM appears to be confined to its application to operational policing as opposed to investigative strategy, i.e., Taser deployments (see: Dymond, 2014) or risk assessing missing persons (see: Smith and Shalev Greene, 2015). Further, Dando and Ormerod (2017) asserted that the NDM is particularly unsuited to hypothesis generation and therefore is potentially of relatively little value to the investigative process.

The Impact of ‘Affect’

In studying ‘affect’, Finucane *et al.* (2000) and Slovic *et al.* (2007) suggested that particular occurrences, phenomena, or scenarios carry inherent emotional significance for the individual, which, in turn, causes related biases in decision-making. Slovic *et al.* (2004) referred to affect as “...faint whispers of emotion” that operate automatically, transmitting feelings of “goodness” and “badness” (p. 312). Loewenstein *et al.* (2001) created the *Risk-as-Feelings* hypothesis in which it is postulated that cognitive assessment of a dilemma is affected by the individuals ‘feelings’ about it, principally in terms of anticipation of how a particular outcome might feel. Anticipatory emotions such as fear and anxiety are therefore suggested to be felt as an immediate reaction by individuals confronted with a challenging decision situation (Loewenstein *et al.*, 2001). This, in turn, can cause a divergence from what the individual considers the best course of action to behaviour driven instead by emotions.

Therefore, instead of a reliance upon analytical judgment processes assessed by merits (or otherwise) of any given situation, the impact of ‘liking’ or ‘disliking’ is instant when a set of circumstance is encountered (see: Zajonc, 1980). This rapid judgment response was previously labelled ‘hot cognition’ by Abelson and Bernstein (1963) and has been

explored in further subsequent studies. For example, Ask *et al.* (2010) found that increased cognitive load (i.e., the mental demands imposed within a decision situation) increase the impact of a rape victim's emotional presentation when a police officer was assessing the veracity of the victim's account. For Ask *et al.* (2010), this type of judgment was an example of hot cognition, utilising instant subjective reactions. This notion of hot cognition and speedy judgment decision-making has parallels to Kahneman's (2011) concept of "system 1" and "system 2 thinking" (p. 20), with the former representing fast and intuitive thought and the latter deliberate, analytical assessment. Arguably, this literature indicates that the existence of quickfire, emotionally driven decision-making procedures are likely to provide a significant challenge for slower, more conscious processes that follow a rational approach. For example, British detectives interviewed by Fahsing and Ask (2013) explicitly warned against the reliance on intuition during homicide investigation as it can contradict with an 'investigative mindset' approach. However, Wright (2013) argued the importance of investigator intuition for hypothesis generation using recognition of cues from the environment based on prior knowledge and beliefs, especially under increased uncertainty.

Avoidance and Deferral

Another academic perspective on the links between emotion and decision-making is the apparent absence of a decision in response to an issue, as well a delay in making that decision. *Prospect Theory* suggests that decision-making is largely concerned with perceived gain and loss, which can apply in many situations involving risk, and explains that humans tend to prefer avoiding losses to acquiring equivalent gains (Kahneman

and Tversky, 1979). Therefore, people may be unwilling to make decisions that represent loss, even though the decision itself may be the best option. Maner *et al.* (2007) identified a link between individuals' predisposition to anxiety and their preference for decision choices that avoid risk. Anderson and Cooper (2003) previously defined this as 'decision avoidance' which referred to a process of postponement that justifies a decision to take no action framed in four different ways: (1) choice deferral (preference for delay); (2) status quo bias (preference for no change); (3) omission bias; and (4) inaction inertia (both of which indicate preference for no action). Notably, choice deferral was initially identified by Dhar (1997) in studies of retail consumer choices in decision-making. Dhar (1997) observed that the processes that underpinned the consideration of differing options was rarely a rational evaluation for suitability as individuals are affected by 'preference uncertainty' (unable to differentiate effectively between several choices) and this leads to a tendency to avoid commitment. Furthermore, Li *et al.* (2017) asserted that a feeling of being out of control within a situation is likely to increase the chances of an individual deferring a choice as that effectively increases their feelings of their own dominance over that situation.

As such, uncertainty is a key concept in academic discussions surrounding judgment and decision-making. Schmitt and Klein (1996) defined uncertainty as aspects of a situation which are not known or understood due to missing, ambiguous, or overly complex issues. Arguably, as uncertainty can increase hesitance, delay decision-making and can block subsequent action (Lipshitz and Strauss, 1997). In policing studies, uncertainty has been found to impact on evidence search strategies and interview questioning style, resulting in search strategies based on initial assessment of guilt or innocence (Hill *et al.*, 2008; Rassin *et al.*, 2010). This suggests that uncertainty

can exacerbate the influence of confirmation bias on decision making in this context, searching only for information that supports a hypothesis even though there is more value in identifying evidence that disconfirms it (see: Klein, 1999).

In respect to omission bias, Ritov and Baron (1992) described it as “...the tendency to favour harmful omissions over equally harmful commissions” (p. 50). Ritov and Baron (1992) further explained that individuals felt more responsible for outcomes of decisions they have made, or actions they have taken (commissions), than for outcomes of not doing so (omissions). Similarly, Van Den Heuvel *et al.* (2012) found that police officer omissions of decisions in simulated counterterrorism events was “...potentially due to a belief that being responsible for a non-decision would involve less severe repercussions for their personal, or their force’s, reputation” (p. 184). Further, other decision-making researchers have found that in high stakes situations which involve real-life critical incidents (e.g., police operations and emergency responses), decisions are often based on ‘least-worst’ assessment (see: Alison *et al.*, 2015; Power and Alison, 2017a; 2017b) where every action is high-risk and could (potentially) have severe negative consequences in critical incidents (Shortland et al., 2020).

METHOD

The aim of this study was to examine the decision-making processes of police investigators in SUDC cases. Further, the study examined the specific role of personal and situational factors on how critical decisions are made during a simulated SUDC investigation. As such, this study incorporated a mixed methodology to capture both

quantitative categorical and qualitative data relating to participants' thought processes whilst making critical decisions during a training session. The training session took the form of an immersive simulation exercise in which participants took the role of the Senior Investigating Officer (SIO) responding to a SUDC.

Participants

A total of 26 participants took part in the study over the course of three sessions. All participants were current serving police officers from a police force in the North-West of England. The officer ranks ranged from detective inspector to detective sergeant. Attendance was via open invitation to police officers of specified ranks and roles who were likely to encounter SUDC incidents and be required to provide a lead investigative response. Thirteen participants (50%) indicated that they had a minimum of 6 months experience working in a Public Protection Unit¹ (and therefore were more likely to have been deployed to a SUDC or have relevant operational experience of child protection issues) whilst six participants (23%) stated that they were PIP3² qualified or working towards that qualification, indicating they were able to lead homicide investigations. The mean length of police service of participants was 21.88 years ($SD = 4.13$) with a service range of 15-28 years. No other demographic information was collected to

¹ Public Protection Units are police departments consisting of detectives who focus exclusively on investigations where the victims are assessed as vulnerable, e.g. child abuse, child sexual exploitation or vulnerable adult abuse. Public Protection Unit officers are more likely to be deployed to respond to the initial stages of a SUDC incident.

² PIP 3 is an abbreviation of the police 'Professionalising Investigating Programme, Level 3'. This is a system of training and accreditation for Senior Investigating Officers, overseen by the College of Policing. Level 3 is the qualification for leadership of homicide and other serious crime investigations. A PIP 3 accredited SIO will, under the policy of this specific Constabulary, have oversight of a SUDC incident and will take direct ownership of the investigation should it be assessed to be suspicious.

ensure anonymity within such a small and purposive sample.

Materials

The training session was an immersive classroom-based scenario which used PowerPoint with integrated audio clips to structure the scenario progression and was facilitated by one of the authors, operating as a Subject Matter Expert (SME) in the field of child death investigation. The training aim was to expose officers' development areas in a safe learning environment so that they would be better equipped for live operational scenarios. During the information-escalating scenario, participants were asked to take the role of the SIO. The scenario included several critical decision points (DPs), which became more challenging as the scenario progressed (see Table 1). Fahsing and Ask (2013) identified 'tipping points' that catalyse a move between mindsets, from deliberative to implementational (see: Gollwitzer, Heckhausen and Steller, 1990). These tipping points were reflected within the study design.

At each DP, participants were given four available options. In coding the options, one was designated as the most conservative (i.e., take no action and await further information); one as the most progressive (e.g., making arrests); and the other two as mid-range neutral responses. The designation of the options was unknown to the participants. This coding process was configured based on the SME's professional experience. The progressive, neutral, and conservative decision options were purposely re-ordered for each DP to avoid participants defaulting to a particular option out of habit due to its routine position within the sequence.

The design, content, and format of the scenario was reviewed and endorsed by three independent SME's and was already embedded as a sustained programme of staff development for detectives within the police force concerned. The sessions were only adjusted to include the completion of a questionnaire for the purposes of data collection. The training scenario's storyline reflected real-life investigations. Particularly challenging elements of those investigations were combined ensuring that the content was authentic, current and likely to generate acute professional challenge. The scenario commenced with an audio clip of a police control room operator informing participants of the sudden death of a baby boy. Participants were then guided, via a PowerPoint presentation, through the various phases of the unfolding incident while being fed escalating information of the scenario.

[Insert Table 1 near here]

Participants were given a questionnaire to complete during the training exercise in which they were asked to record: (i) their preferred option of the four available choices (progressive, neutral 1, neutral 2 or conservative) for each DP, (ii) up to three personal factors; and (iii) up to three situational factors that were impacting on their decision-making process at that stage in the scenario. Personal factors were defined as: '... one that derives from your own personal perspective, e.g., personal feelings, self-confidence, anxieties or levels of experience - in other words: "How do you *feel* about the situation?' Situational factors were defined as: '... one that relates to the situation/circumstances with which you are dealing, e.g., the physical environment, the availability of resources or time constraints - in other words: "What in particular about

the current *situation* is affecting your actions?’ By seeking data from two perspectives, this method aimed to extract richer qualitative data relating to both rational decision-making processes as well as ‘feelings’-based perspectives. The questionnaires were completed individually without conferring with other participants.

Procedure

Participants were invited to complete the training and asked permission for their responses during the session to be collected for research purposes. Before the session commenced, participants were verbally briefed by the researcher regarding delivery format. Comprehensive explanation was provided in respect of the concepts of personal factors and situational factors and the level of understanding amongst participants was checked and confirmed before commencing data collection. The scenario for the session was delivered via PowerPoint with integrated audio clips. At each DP, the PowerPoint was paused, and participants were asked to complete the corresponding section of the questionnaire individually. After doing so, the participants were organised into groups of three-to-five persons and instructed to enter group discussion to discuss the next investigative actions. After a group discussion of approximately five minutes, a single participant was then identified randomly by the facilitator to occupy the ‘SIO hot seat’ and to be challenged around their decision-making and supporting rationale whilst observed by the other participants. After this interactive challenge phase, the scenario and PowerPoint would resume and continue to progress sequentially, using the same data gathering and group discussion format, through the next DPs, until its conclusion. The whole session had a duration of approximately three hours (including a short break at the mid-point), with four DP’s overall. A total of three

separate sessions was carried out to gather data for analysis.

Analysis

The questionnaires were analysed using thematic analysis (TA) in accordance with Clarke and Braun's (2017) guidance. The responses from each of the 26 questionnaires were transferred to an Excel spreadsheet to facilitate comparative analysis of the choices made at the various DP's and participants' comments made in respect to personal and situational factors were recorded and assigned. This analysis was done inductively (led by patterns that were identified within the participants' responses). Where responses appeared to contain data that was particularly interesting, relevant, or meaningful to the research topic they were highlighted and then coded. Codes that contained similar data were grouped together to create themes and sub-themes reflecting emerging patterns within the dataset. This process was an iterative one with the emerging themes being repeatedly reviewed and refined. This finally led to the identification of two key themes of anxiety and uncertainty.

RESULTS

Thematic Analysis

Two key themes were identified in relation to the factors influencing participants' decisions within the scenario. These were: 1) participant identification of uncertainty within the presenting circumstances; and 2) feelings of personal anxiety. Table 2

provides a breakdown of these themes with supportive sample narratives from the transcripts.

Uncertainty was referenced 62 times (29.8%) from 208³ available response opportunities, referred to by 84.6% of participants at some point during the scenario ($n = 22$). This was the most prevalent theme identified. Uncertainty was defined in terms of the participants' attitude towards the presence of relevant or useful information. This included comments where the lack of sufficient information was referenced, where the participant declared a desire for more information, or where the participant felt overwhelmed or overloaded by the presence of too much information. Uncertainty was referenced at all DPs by participants but was most prevalent at earlier DPs. It was referenced most frequently ($n = 33$, 53.2%) at DP2. It was referenced 13 times at DP1 (21%) and eight times each at DP 3 and DP4. Control, principally articulated in terms of participants feeling that they had insufficient and sought therefore to exercise more of it, was identified as a sub-theme of uncertainty by 18 participants. All 18 references were made by participants at DP2. The desire for 'control' was then interpreted as an indicator of participants seeking to minimise or remove uncertainty.

Anxiety was referenced 57 times, equating to 27.4% of the available response opportunities and was referred to by 84.6% of participants ($n = 22$). Anxiety was referenced in all DPs without much variation across the scenario. However, anxiety was most commonly referenced at DP1 ($n = 16$, 28.1%) and DP2 ($n = 15$, 26.3%) before reducing for DP 3 ($n = 12$, 21%) and DP4 ($n = 14$, 24.6%). Within the 57 references to

³ As there was a total of 26 participants, each responding, at four DP's, to two sections (personal factors and situational factors), there was an overall total of 208 opportunities to respond that were subsequently captured by the thematic analysis process.)

anxiety, there were several sub-themes: the desire to ‘do the right thing’ (i.e. achieving this ‘right’ outcome despite significant stress at being required to deal with the death of a child and ‘getting it right’ for the family) and direct expressions of emotional effects, such as ‘anxiety’ or ‘worry’, were the most prominent of these. ‘Doing the right thing’ was referenced on four occasions, each time by a different participant. ‘Getting it right’ was referenced twice by the same participant. Direct uses of the terms ‘anxiety’ and ‘worry’ were made on 20 and 16 occasions respectively.

[Insert Table 2 near here]

Prevalence of Uncertainty and Anxiety across Decision Points

Of the decision options selected by participants, the most popular were neutral options with 53.9% ($n = 56$) of choices. Progressive decision options were chosen 38.2% ($n = 40$) of the time, whilst conservative options were selected just eight times (7.7%) across seven different participants. Across the development of the scenario, progressive decisions were more often made at earlier DP’s (DP1 and DP2) whereas during later DP’s (DP3 and DP4), neutral decisions were preferred generally. Of note, no participants selected the progressive decision option at DP3 (‘blood samples and consideration of arrest’) which was the only occasion when an option attracted no participant selections. At two DPs (DP2 and DP4), a single participant recorded no choice. At DP2, one participant avoided all four options and created a fifth: ‘speak to consultant’. In addressing the choices at DP2, another two participants annotated to the effect that they intended to choose two options at that point.

The themes of ‘uncertainty’ and ‘anxiety’ were identified throughout all four DPs. As such, 15.4% of participants ($n = 4$) made observations coded as uncertainty at all four DP’s and 19.2% of participants generated anxiety-themed comments at all four DPs ($n = 5$). One participant was in both groups, recording thought processes relating to anxiety and uncertainty at each of the four DPs. In contrast, only one participant provided comments that could not be coded under uncertainty or anxiety at any point within their decision-making. All other participants (96.2%, $n = 25$) made observations that were able to be coded under these two key themes at least one DP.

Consideration was given to the preference of candidates’ selected decision options in relation to their self-reported feelings of uncertainty or anxiety throughout the different decision points within the scenario (see Table 3). Table 3 demonstrates that participants who cited uncertainty and/or anxiety as an influential factor on their decision making at earlier points in the scenario (DP1 and DP2), also choose the most progressive decision option available during these DPs. In contrast, these participants were more likely to choose a neutral decision at the later stages of the scenario (DP3 and DP4). For participants who self-reported uncertainty as being an influential factor on their decision making, the most progressive option was chosen most often at DP2 (48.0%, $n = 12$). For participants who self-reported anxiety as being an influential factor on their decision making, the most progressive decision was the preferred option at DP1 (42.3%) and this was the highest percentage of all DP’s. Similarly, neutral decisions were preferred at DP3 and DP4 for participants who cited uncertainty and those citing anxiety as influential on their decision making. Within both key themes, the most conservative decision option was persistently the least popular with a range of 0% to

4% of participants. This represents being chosen by a maximum of just two participants at any one DP.

Notably, feelings of uncertainty were associated with DP2 in particular, whereas feelings of anxiety were more evenly felt across the whole scenario. Feelings of uncertainty appeared to be associated with progressive decisions at DP1 and 2 specifically, whereas feelings of anxiety were more likely associated with neutral decisions at DPs 3 and 4. In relation to the sub-theme of uncertainty, within the 18 direct references to control, 61.1% ($n = 11$) chose the most progressive option, 33.3% ($n = 6$) chose mid-range options and 5.6% ($n = 1$) chose the most conservative option. This majority selection of the most positive option arguably could be reflective of efforts to impose control (e.g., ‘...*chaotic situation need to identify who everyone is and control the persons present...*’ participant 13 at DP2). The lack of association of conservative choices with feelings of uncertainty or anxiety might suggest that these feelings may lead to more progressive decisions under stress. However, these associations were not found to be statistically significant across the dataset.

[Insert Table 3 near here]

DISCUSSION

This study identified the presence of key themes of uncertainty and anxiety within police investigators decision making processes during the completion of a simulated SUDC investigative scenario. The theme of uncertainty was identified across all DPs.

In this study, participants' references for seeking more information, clarifying existing information, as well as having too much information was coded under the theme of uncertainty. For observations coded under uncertainty, the most progressive option was favoured by almost half of the participants early in the scenario at DPs 1 and 2. Uncertainty observations were only minimally referenced when participants made conservative decisions. This apparent preference for progressive action whilst contemplating uncertainty in the early stages of the scenario is similar to Schmitt and Klein's (1996) assertion that information is sought to alleviate related anxiety with participants proactively heading directly towards likely sources of information (in this case, the hospital and the location of the child's parents). Contrary to Lipshitz and Strauss (1997) suggestion that the presence of uncertainty could prevent action being taken, participants appeared to be motivated by the absence of information. This view was corroborated by several participant comments to the effect that attendance at the hospital is needed to obtain more information and that taking control of the parents to obtain their accounts is a priority.

Referring to Loewenstein *et al.* (2001) anticipatory emotions are an immediate reaction when faced with a challenging decision situation, the key theme of 'anxiety' was found in participants' concerns about the confronting scenario. This included direct references to anxiety as well as other comments that indicated high levels of concern and stress, a major theme of this study. This was present at all DP's and points towards the stressful nature of child death investigation, similar to Roach *et al.* (2018) findings.

For participants whose decision comments were coded under anxiety (and in common with the theme of uncertainty), the most progressive choice became less popular as the

scenario progressed. Conversely, neutral decision options became more popular. These persistent references appear to support the notion of the ‘affect heuristic’ in which emotions are relied on to make decisions immediately without effort (see: Finucane *et al.*, 2000). Notably, the subject of child death investigation causes an immediate, negative feeling in some participants from as early as DP1 (e.g., “*why me again*”, participant 13 and “*...don’t like dealing with dead children!*”, participant 14). This further supports the notion of rapid assessment, identified and examined as “hot cognition” (Abelson and Bernstein, 1963; Ask *et al.*, 2010). The latter’s assertions regarding the amplifying effect of cognitive load would appear to be consistent with the demands and complexity of a child death investigation incident.

There was limited evidence of participants deferring their choice at various points. ‘Preference uncertainty’ (see: Dhar, 1997) can lead to the inability to make a choice at prescribed points in time, particularly when the available choices are undesirable to the individual. This was demonstrated by a small number of participants deviating from the exercise instructions in order to generate alternative choice configurations, including making no decision (e.g., recording no choice, not selecting available options and creating their own, and indicating choosing two options). Li *et al.* (2017) asserted that feelings of loss of control also generate choice deferral. In this study, the majority of participants (69.2%, $n = 18$) referred to control. Within this group, 61.1% ($n = 11$) chose the most progressive decision option; this would initially indicate that the link between loss of control and choice deferral is not supported based upon findings. However, closer examination of the data suggested that selection of the most positive option is reflective of efforts to impose control (as opposed to it already being lost).

Further, extremely limited use of the conservative option at all DP's was observed. This may indicate that there is a preference for action over inaction for individuals investigating child death. The theory of omission bias (see: Ritov and Baron, 1992; Van den Heuvel et al., 2012) suggests that there are circumstances where, in the face of critical decisions, such as life-or-death medical dilemmas, or terrorist incidents individuals will opt to omit to act to avoid taking responsibility for potentially undesirable consequences. Notably, there were five direct references to 'responsibility' made within the data. On four of those occasions, the participant opted for the most progressive choice. This is notably in conflict with Ritov and Baron's (1992) previous findings and further research should specifically explore causation. One explanation is that the scenario within this study required participants to operate in direct contact with key individuals. Therefore, it would arguably be unnatural for a police officer to be seen to take only minimal action in response to such a serious situation. As such, the behaviour of participants in this study did not therefore support the presence of omission bias.

Lastly, no participants within this sample referred, directly or indirectly, to any of the established police literature, or to the National Decision Model (NDM) as an influencing factor or consideration of their decision making at any point during the scenario. This suggests that, despite the College of Policing's (2014) assertion that the NDM is suitable and should be used for police decisions, there is no evidence to suggest it is being used by investigators in decision-making scenarios. Further, it could be argued that NDM may hold little practical value for officers investigating child death and NDM is not suited for investigative processes such as hypothesis generation (see: Dando and Ormerod, 2017).

Study Limitations

The method used involved a novel design utilising a developing hypothetical scenario split into four decision points aimed to enable the recording of decisions made on a scale of progressive-conservative and elicit self-reported factors influencing on these decisions at each DP. Notably, paper-based decision-making scenarios such as this has its limitations and cannot fully replicate the varying complexities associated with a real investigation and subsequently may not capture all independent factors which influence decision making in this context. Further, the sample size was somewhat limited (26 participants total) and all participants were from the same police force. Therefore, the generalisability of these results is arguably limited. Additionally, the differing levels of participant experiences within this sample may have affected responses to scenario decision points, but this was not analysed as a potentially influential variable.

Methodologically, the strengths of this approach lie principally in the rare access to participants with current involvement in operational policing and performing roles involved in high levels of exposure to the subject matter. This uniquely provided a rich context for the data obtained. Conversely, the relatively small sample size, drawn from a single force is inherently limiting in terms of wider applicability of the conclusions that can be drawn. Despite these limitations, we consider this novel approach within a typically unexplored population of decision makers to be very crucial in the understanding of investigative decision making. As such, we suggest further theoretical exploration and consideration of changes to practice which support investigative decision makers in an evidence-based way.

Future Implications

This study offers a unique assessment of investigative decision-making processes during child death investigations. In contrast with current police guidance documents, the role of cognition and emotion was very evident. Decision-making theoretical perspectives such as the impact of *affect* (see: Finucane et al 2000) and *decision deferral/avoidance* (see: Anderson and Cooper, 2003) were evidenced in this study in relation to the impact of uncertainty and anxiety on the investigator's decision making, suggesting that they remain relevant for current practitioner environments.

In terms of *affect*, there was considerable evidence that the subject of child death investigation does carry the emotional resonance suggested by Slovic *et al.* (2004), especially in terms of anxiety, leading to the conclusion that this is an area of particular challenge for police investigators to say the least. Considering this, policy considerations could focus on officer welfare in this area (see: Roach et al, 2018) through the introduction of appropriate debrief and support mechanisms. This could tie into existing broader wellbeing policy initiatives in policing such as ‘A Common Goal for Police Wellbeing’ (Hargreaves et al., 2018) and the Oscar Kilo web resource recently endorsed by (now former) Chief Constable Andrew Rhodes from Lancashire Constabulary (Oscar Kilo, 2020).

In this highly sensitive area, there is an opportunity to empirically explore this topic further to assess the utility of existing policy, guidelines, and training to supporting real-world investigative decision-making. For instance, there are opportunities to conduct further research aimed at quantifying how varying levels of affect, experience

and/or expertise impact on investigative decision making in different policing contexts and/or to evaluate the utility of alternative decision-making models to the NDM within child death investigation, e.g., SAFE-T (Shortland, Alison and Barrett-Pink, 2018) or the OODA loop (MacCuish, 2012). As a result, policing policy could be amended to mandate officer assessment in terms of the cognitive and emotional factors found to impact upon it, e.g., affective impact (Finucane et al, 2000). This, in turn, could influence police training delivery, providing investigators with a broader perspective on operational delivery as well as improved self-awareness. Considering a key finding of this study relates to the role of anxiety on investigative decision making in this context, future research may also want to explore the connection between this and police wellbeing in more depth.

CONCLUSIONS

Participants reported key themes of anxiety and uncertainty at all stages during the SUDC decision-making scenario. Further, feelings of uncertainty, a lack of control and anxiety, were found to be associated with progressive decision making in the first steps of a SUDC investigation. There was also evidence of affective responses linked to hot cognition and some limited evidence of choice deferral. Theoretical perspectives that suggest that feelings of uncertainty inhibit action were however not supported. Similarly, the theory of omission bias was also not supported by findings. Instead, the findings suggest that investigators may prefer ‘action over inaction’, especially when facing increased levels of uncertainty and anxiety. Further, there was no evidence of investigators utilising current models and processes formally advocated within policing

literature to make decisions. This finding is significant as this has not been explored in literature, nor in SUDC case investigations specifically. Further, the NDM was never referenced by participants at any point during their decision-making process in a SUDC scenario. This raises questions about the practicality of NDM to child death investigators specifically along with when it should generally be used in police decision-making scenarios where anxiety and uncertainty are heightened. In the critical area of SUDC investigations, the emotional element of decision-making was prominent, suggesting that existing policing policy and training programmes in relation to decision-making support would benefit from further research which may highlight needs for substantial evidence-based revision.

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