Understanding healthcare workers' responses to violence and aggression at work

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Submitted in accordance with the requirements for the degree of
Doctor of Clinical Psychology (D. Clin. Psychol.)
The University of Leeds
The Institute of Health Sciences and Public Health Research

July 2006

Acknowledgements

There are numerous people without whom this research would not have been possible; my gratitude extends to them all.

Firstly, I would like to thank all of the ambulance workers and hospital staff who took the time to fill out the questionnaires. I would like to express my gratitude to those ambulance staff that had the courage to be interviewed about their experiences of violence and aggression, without their openness this thesis would not have been possible.

Secondly, I would like to extend my thanks to the Controls Assurance and Risk Managers and staff at the ambulance service and hospital site, who gave up their time to help recruit participants and offer advice and support to me on the recruitment process. I would particularly like to thank Peter Goddard and Robin Hays who went out of their way to support this research project. I am especially grateful to my supervisors, Dr Daniel Salter, Dr Carol Martin and Professor Stephen Morley. They have encouraged me throughout this process and kept me motivated when challenges occurred. I want to extend a special thanks to Carol for stepping in at a late stage to supervise this thesis, for her generosity and for her calming words. I would like to thank Sheila Youngson for her understanding and support. I would also like to thank Anna Madill, Anke Ehlers, Thomas Ehring and Emma Dunmore for their theoretical advice.

Finally, to Rupert, my dog, thank you for the relaxing walks you ensured we went on twice daily, they kept me sane. To my friends and family, thank you for your tolerance when I was down and for making my breaks full of fun. To Emma thank you for being there throughout this whole process it made it bearable. To Sarah, thank you for your friendship and for sharing the high and lows of training. To my mum, thank you for your endless enthusiasm for all that I do and unconditional support and understanding; in part this achievement is yours. I am so grateful to Tom, my fiancé, thank you for your boundless tolerance, you total belief in me and unerring support throughout this whole process, I could not have done this without you.

Abstract

The primary objective of this study was to investigate whether there was evidence for the proposed mechanisms within the Ehlers and Clark (2000) cognitive model of Post-Traumatic Stress Disorder (PTSD). Two principal relationships were to be investigated: firstly, whether behavioural and cognitive strategies prevented change in the nature of the trauma memory and appraisals of the trauma and its sequelae over time; secondly, whether aspects of trauma memory and subsequent appraisals of the trauma and its sequelae mediated the relationship between peri-traumatic cognitive processing and PTSD symptoms. The second research objective involved further validation of the Ehlers and Clark (2000) model. The study was conducted on a population of health service employees exposed to aggression and/or violence at work, using a prospective, longitudinal design. A low response rate meant that there was not sufficient power to test these relationships. The findings from Study 1 were a low response rate, low reporting of incidents of violence and aggression and low PTSD symptoms, particularly amongst ambulance workers.

Findings from Study 1 led to a qualitative study being carried out to investigate: the possible reasons for the low response and reporting rate; the lack of PTSD symptoms; and to explore responses of ambulance workers to workplace violence and aggression. Twenty-four interviews were carried out with ambulance workers, and the data was analyzed using Thematic Analysis. PTSD symptoms were described by interviewees in themselves and their colleagues, following incidents of violence and aggression. Low response rates were discussed in the context of a general reluctance to report incidents and to show that they had not been affected by violence and aggression. The responses to violence and aggression took two forms, a macho or tough response and a reflective, sensitive approach. Colleague relationships were an important source of support for many of the ambulance workers and management were portrayed as uncaring. These findings were considered in the context of the literature and the Ehlers and Clark (2000) model.

Statement

The data collection for study 1 was carried out at 2 sites. The negotiation of the data collection procedure and data collection process at Site 1 (ambulance service) was carried out by the author. The data from this site was then shared with the co-researcher Emma Bishop. The negotiation of the data collection procedure and data collection process at Site 2 (hospital) was carried out by the author along with Emma Bishop. Duties were carried out separately (e.g. briefing ward staff on the study and methods of participation) or together (e.g. meeting senior staff and risk managers to co-ordinate data collection procedure) depending on the task to maximise the efficiency of the process. The data from Site 2 was shared between the author and Emma Bishop.

Contents

Literature Review Study 1

Introduction

Before embarking on a discussion of the literature it is important to outline the key features of PTSD and its treatment, as well as considering the merits of the diagnosis itself.

PTSD was officially recognised in DSM-III in 1980 (American Psychiatric Association, 1980) and is considered to be a type of anxiety disorder. According to DSM-IV (American Psychiatric Association, 1994, p.427), the person must have "experienced, witnessed, or [been] confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others". The person's response must have also involved "intense fear, helplessness or horror" (p.428). In addition, one or more of the following clinical features must have been present for a month or more: re-experiencing, involuntary intrusions of the traumatic event, e.g. nightmares or images; avoidance of reminders of the event; a range of symptoms of hyper-arousal e.g. hyper-vigilance, difficulty concentrating. Other symptoms that can occur include excessive rumination about the event or emotional numbing. Depressive and anxiety symptoms are often co-morbid with PTSD. The Nice Guidelines (2005) recommend Cognitive Behavioural Therapy (CBT) or Eye Movement Desensitisation Reprocessing (EMDR) as first line treatment for this disorder as both have robust evidence supporting their use. Drug treatment is only used if the patient is experiencing an ongoing threat or if they refuse therapy.

Despite evident recognition of PTSD as a disorder by many in the psychiatric, psychological and general population, the diagnosis is not viewed by all as robust. Summerfield (2001) argues that psychiatric categories such as PTSD are socially constructed concepts, not objective truths. He suggests that PTSD is an imprecise diagnosis and fails to differentiate between normal distress and clinically significant psychiatric dysfunction. Although this view could be considered radical, it highlights the need for caution when researching or helping individuals following adverse events. For example, studies have shown that intrusive memories of events occur in non-clinical samples (Bywaters, Andrade & Turpin, 2004) and should not automatically be viewed as evidence of pathology. Although Summerfield's (2001) reductionist stance leaves little room for a diagnosis of PTSD, a middle ground needs to be found that allows the possibility of extreme stress reactions that could be termed PTSD, as well as 'normal' stress reactions. It could be argued that the key difference that separates PTSD from distress is that the symptoms such as intrusions or ruminations are directly linked to the event, are not easily stopped (Ozer et al., 2003) and significantly impact the psychological, emotional, social and/or occupational functioning of the individual. Researchers, clinicians and organisations must therefore strive to differentiate between normal distress and PTSD following adverse events and not assume that intervention, in either case, is automatically required (Nice Guidelines, 2005). Summerfield (2001) also draws attention to the term 'post-traumatic' and the implied aetiological link between the index incident and the distress. He points to the literature,

that will be reviewed below, that has shown a range of other factors that account for more variance in PTSD symptoms than the incident itself. This highlights the importance of considering the wide range of predictive factors leading to PTSD and to considering the psychological well-being of staff at all times and not just following a particular incident.

Bearing in mind this more cautionary stance it is evident that the symptoms of PTSD can be debilitating to any individual who experiences them and can affect all aspects of their lives. The prevalence rate for PTSD in the general population is 8% (Kessler, 1995), for healthcare workers this figure rises to between 12 – 22% (Alexander & Klein, 2001; Clohessy & Ehlers, 1999; Hafeez, 2003; Laposa & Alden, 2003; Laposa, Alden & Fullerton, 2003; Grevin, 1996; Rentoul & Ravenscroft, 1993). PTSD can result from numerous different types of traumatic incident, including violence and aggression. The number of reported incidents of violence and aggression against NHS staff in 2005 was 60,385 (Aldrich, 2006). It is therefore evident that considering the response of healthcare workers to violence and aggression in relation to PTSD is an important research endeavour. However, it is also crucial to consider the difference between normal distress and PTSD when researching and working with victims of violence and aggression.

Numerous models have been put forward to explain the onset and maintenance of PTSD. Some of the most prominent draw on cognitive theory, and within these the most credible is described by Ehlers and Clark (2000) (Brewin & Holmes, 2003). In the following section, a number of the cognitive models of PTSD will be described and critiqued to outline what is known about PTSD from this perspective. This will lead to a discussion of the most developed of these models, the Ehlers and Clark (2000) cognitive model of PTSD, and the research that has investigated this model will then be reviewed. Research into PTSD and healthcare workers and workplace violence and aggression will then be outlined and the aims for this study presented.

Theories of PTSD

Numerous models have been proposed to explain PTSD but as yet there is no single accepted approach. The most fully developed and researched are the cognitive models (Dalgleish, 1999). The earliest of these is Horowitz's (1973, 1986) stress response theory. Although derived from psychodynamic theory, Horowitz (1973, 1986) explains response to trauma in terms of cognitive processing. He proposed that when faced with a trauma people's initial response is to 'cry out' or be stunned. This is followed by a period of information overload which triggers what he calls the 'completion tendency'. This is where the individual tries to assimilate the new information with prior knowledge, but in the case of PTSD is unable to. Because people are unable to integrate this information psychological defence mechanisms serve to keep the information in the unconscious and the individual experiences a period of numbing and denial. However, the completion tendency keeps the trauma-related information in 'active memory', causing it to break through these defences

as flashbacks. There is an oscillation between avoiding the trauma-related information and experiencing intrusions. This oscillation can either lead to successful resolution or to some trauma-related information being left in 'active memory', whereby PTSD develops and is maintained.

Horowitz (1973, 1986) emphasises the impact that avoidance strategies have on the development and maintenance of PTSD. He stresses the importance of integrating trauma-related information into consciousness, the individuals' view of themselves, the world and their future. However, Horowitz's (1973, 1986) proposals have a number of limitations. He does not explain the difference between flashbacks and ordinary memory, individual differences in reaction to trauma, peri-traumatic responses, the role of environmental factors such as social support nor how to distinguish successful recovery from successful avoidance (Dalgleish, 1999; Brewin & Holmes, 2003).

Janoff-Bullman (1985, 1992) developed the Cognitive Appraisal Theory. She argues that individuals have deeply held beliefs that are probably unexamined, about themselves, the world and other people. These beliefs are that: they are generally good, well-meaning people; the world is benevolent; and other people are generally well-disposed towards them and act in a predictable way. These beliefs can be shattered by a trauma and the individual may be plunged into a confusion of intrusions, avoidance and hyper-arousal. The mechanism of recovery is similar to Horowitz's as the assumptions previously held by the individual are updated by a cycle of re-experiencing and avoidance.

Janoff-Bullman's (1985, 1992) emphasis on the influence that an individual's prior beliefs have on the processing of a trauma and the importance of deliberate updating of information in recovery, is crucial to the understanding and treatment of PTSD (Brewin & Holmes, 2003). However, there is little explanation of the mechanisms occurring when the assumptions are shattered. Janoff-Bulman (1985, 1992) implies that people universally hold the three specific assumptions, but this is unlikely to be the case. In particular if someone has experienced trauma before, one would expect them not to hold such positive assumptions, but this theory would imply that this is a protective factor. However, quite the opposite has been shown to be the case (e.g. Resick, 2001). Brewin and Holmes (2003) cite Janoff-Bullman's response to this criticism of her model: she suggests that previous negative experiences render the individual with an unstable view of themselves, the world and others. This introduces a new notion that trauma can only shatter assumptions once.

Cognitive theories that have focused primarily on the traumatic event rather than its social/personal context have been called "information-processing" theories. The majority of these are based on Lang's (1979) work on fear conditioning. Frightening events are represented in memory as interconnections between nodes in what he terms a 'fear network'. This network contains stimulus information about the traumatic event, sights, sounds, the person's emotional and physical response to the trauma and the degree of threat the individual was under. This network could be easily

activated by stimuli that could be ambiguous but have some similarity to the original trauma. When activation occurs the individual re-experiences the same reactions they had at the time of the trauma and they tend to make meaning judgements that accord with the original memory. Chemtob, Roitblat, Hamada, Carlson and Twentyman (1988) argue that people with PTSD have a fear network that is continually activated, so that they function in survival mode because that was adaptive during the traumatic event. This permanent activation leads to symptoms of hyper-arousal and intrusions. Their work was based on veterans of the war in Vietnam and is therefore somewhat narrow in its focus. This might explain why the model does not account for other variables such as attributions and social support (Dalgleish, 1999).

Foa, Steketee and Rothbaum (1989) built on the fear network theory and suggested that PTSD is different to other anxiety disorders because the traumatic event violates formerly held basic concepts of safety. The fear network laid down following a traumatic event is different to a normal memory because the connections between stimuli in the environment and the nodes that make up the network are very strong and will have a low threshold of activation. Once the fear network is activated the individual becomes hyper-vigilant (arousal), they start to re-experience the traumatic event or aspects of it (intrusions) and attempt to avoid and suppress this intrusion (avoidance). To weaken the fear network it needs to be activated and modified by incorporating information that is incompatible with it. This would be done with imaginal or in vivo exposure (Brewin & Holmes, 2003). PTSD may however persist if some of the connections remain. The fear networks can be left in tact if excessive arousal or thinking errors interfere with attention to, and integration of, disconfirmatory evidence, or if there is avoidance of exposure to trauma cues.

The information processing theories have provided a clearer account of how trauma memories are laid down and persist to produce PTSD symptoms. Brewin and Holmes (2003) see their greatest contribution being the development of theoretically grounded treatment interventions. However, the early theories did not explain how memory can produce rapid flashback but at the same time contain gaps and be disorganised. There is no differentiation between flashbacks and ordinary trauma memories. Brewin and Holmes (2003) also note that research in animals shows that trauma memories are not eradicated but actually remain intact and that fear reactions are inhibited by the creation of new memories (Bouton & Swartzentruber, 1991, in Brewin & Holmes, 2003).

Foa and Riggs (1993) and later Foa and Rothbaum (1998) have advanced from Foa et al's (1989) fear networks theory. They proposed that individuals with rigid pre-trauma beliefs would be at greater risk of developing PTSD. Negative schemas involving incompetence and danger could be reinforced by appraisals during and after the trauma, appraisals of other people's reactions and of disruptions in daily activities. Foa and Rothbaum (1998) hypothesised that exposure to details of the

trauma serves to reduce anxiety about it, integrate new information into an organised memory system and aid positive reappraisal of actions.

This theory has advanced Janoff-Bulman's work by emphasising that rigid beliefs, whether positive or negative, can be a risk factor. The theory has also provided clear mechanisms that underlie the success of exposure and has emphasised the importance of appraisals and pre-trauma risk factors. However, Brewin and Holmes (2003) point out that there is no consistent evidence to show that improvement in therapy is related to changes in the structure of trauma memories, to initial activation in fear or to habituation. The notion of the fear network has also been criticised as it supposes that if one node is activated all will be and therefore the entire fear memory would be recalled. This does not explain why some patients experience gaps in their trauma memories (Mechanic, Resick & Griffin, 1998).

Brewin's (1996, 2001) Dual Processing theory attempts to account for all aspects of PTSD by suggesting there are two memory systems. Verbally accessible memory (VAM) is one such system. It only contains information consciously attended to, provides a context for that information and stores it in long-term memory ready to be accessed. VAM memories include both "primary emotions" that happened at the time and "secondary emotions" generated by retrospective cognitive appraisals of those events (Brewin, 1996).

Situationally accessible memories (SAM) are thought to contain "primary emotions" and information that is not consciously attended to eg. sights, sounds, physical arousal, pain. SAMs have no verbal code and are triggered by internal and external reminders of the trauma and are experienced as flashbacks.

In 2001 Brewin used neuropyschology to elaborate his theory. Fear processing has been shown to be associated with the amygdala and there are different pathways to it leading to different types of memory processing. VAMs appear to be processed via the hippocampus to the amygdala, providing integrated information located in appropriate temporal and spatial context. However, when the body is under prolonged stress hippocampal functioning is reduced which may account for the gaps in the VAM of PTSD patients. SAMs are thought to primarily involve the amygdala, which has been shown to function better under stress than the hippocampus, ensuring SAM memories are preferentially retained.

Brewin (1989) states that recovery from PTSD requires the patient to perceive they have control, to reattribute any responsibility and integrate new information with prior beliefs. This should reduce the negative appraisals that lead to negative emotions. When the patient consciously attends to the SAM rather than suppressing them, the information becomes re-encoded into the VAM system. Information is given a context in time and space and threatening information from the SAM can be

paired with information in the VAM that shows the threat to be in the past. When the patient experiences reminders of the trauma the activation of the elaborated VAM will inhibit the activation of the SAM and prevent inappropriate amygdala activation and the accompanying fear (Brewin, 2001).

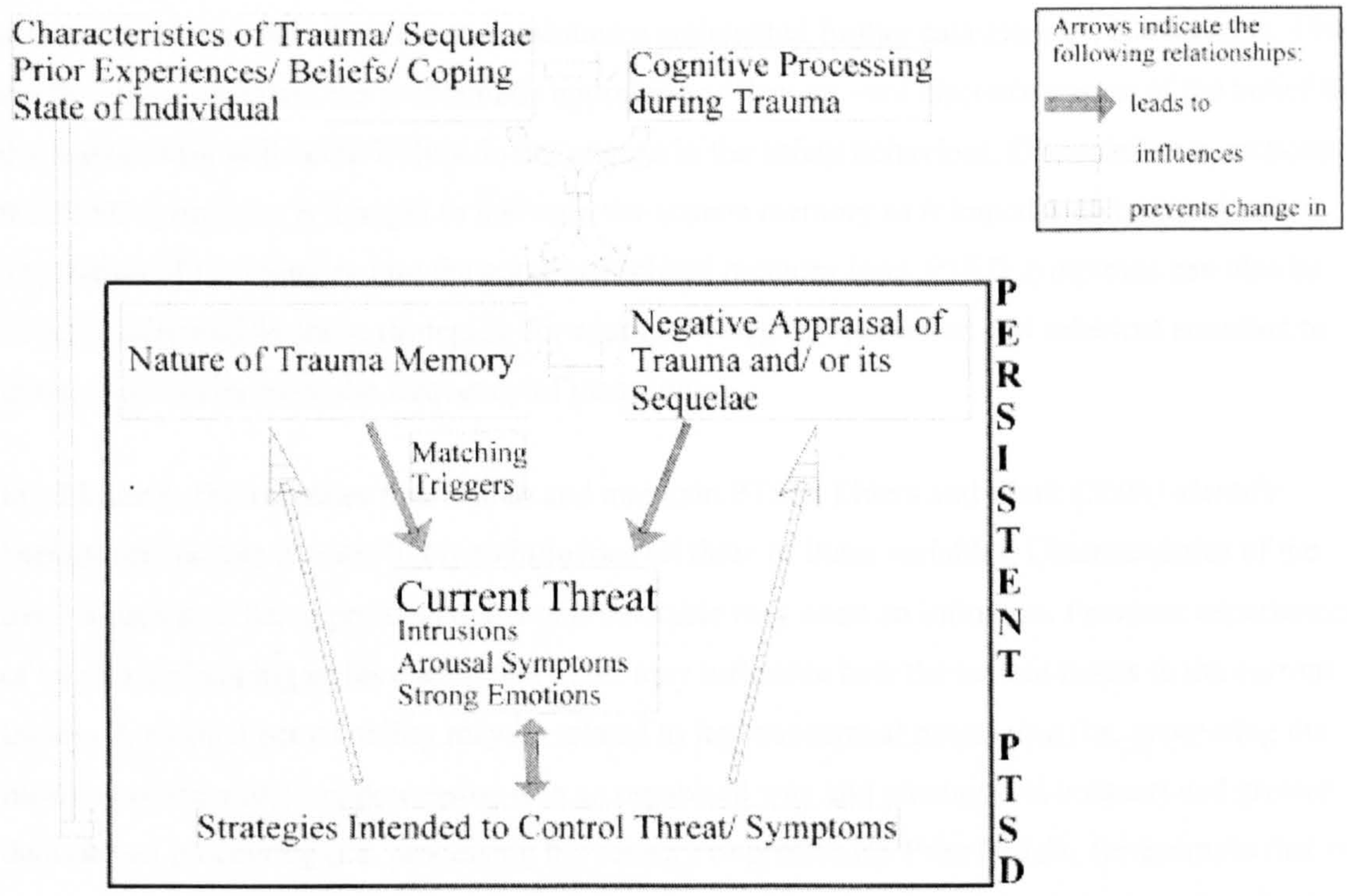
The thorough explanation of trauma memories has great therapeutic as well as theoretical validity (Brewin & Holmes, 2003; Dalgleish, 1999). However, there are some limitations to the model. The focus is mainly on memory, emotion and appraisal and less on additional aspects of PTSD, like emotional numbing or increased conditionality (Brewin & Holmes, 2003). Dissociation is described as hindering encoding information into the VAM, but there is little explanation as to why dissociation features as a symptom of PTSD.

The summary of the theories above shows that they further our understanding of PTSD, however they tend to focus on certain aspects of the disorder. By contrast Ehlers'and Clark's (2000) cognitive model, according to Brewin and Holmes (2003) offers the most comprehensive account of the maintenance and treatment of PTSD. Ehlers and Clark (2000) (Figure 1 illustrates their model) argue that patients with PTSD feel under current threat. Two key processes lead to this sense: individual differences in the appraisal of the trauma and/or its sequelae and individual differences in the nature of the trauma memory for the event and its link to other autobiographical memories.

Negative appraisals of the trauma or sequelae take different forms but all lead to a sense of internal (eg. threat to one's view of one's self as capable) or external (eg. the world is a dangerous place) current threat. Examples of negative appraisals of the traumatic event are: over-generalising from the event; exaggeration of the probability of further catastrophic events; and negative appraisal of how one behaved during the event. Examples of negative appraisals of the trauma sequelae include: interpretations of one's initial PTSD symptoms; appraisals of the consequences of the trauma on other areas of life (eg. pain); and interpretation of other people's reactions in the aftermath. For example, if others people's reactions include a reluctance to discuss the trauma because they fear they may remind the individual of the experience, or if they are critical, then the 'victim' is less likely to seek talking therapy and less likely to receive support or corrective feedback for potentially negative appraisals of the trauma. The nature of trauma memory is contradictory; on the one hand people have difficulty intentionally recalling the memory and on the other they experience involuntary remembering. Ehlers and Clark (2000) identify two routes to the retrieval of autobiographical information, one higher-order meaning-based and the other through direct triggering by associated stimuli. If higher-order memories are elaborated their retrieval route is enhanced at the expense of the stimuli based remembering. In PTSD they argue that trauma memory is fragmented and inadequately integrated into autobiographical memory, leading to a sense of current threat, absence of links to subsequent information and problematic intentional

recall. The unintentional recall is thought to occur because the Stimulus-Stimulus (S-S) and Stimulus-Response (S-R) associations are very strong for traumatic material. This causes particular

Figure 1. Ehlers' and Clark's Cognitive Model of PTSD (2000)



problems because often the individual is unaware of the triggers. Another cause of unintentional recall comes from the strong perceptual priming for stimuli that were temporarily associated with the trauma. Because this memory is a form of implicit memory the triggers are often vague approximations of the original cue.

Negative appraisals of the trauma or its sequelae and the nature of the trauma memory are thought to interact in a reciprocal manner. Recall of the traumatic event will be biased by their appraisals and they will selectively retrieve information that is consistent with these appraisals. Inability to recall will also be appraised in such a way that maintains a sense of current threat. The 'here and now' quality of the recall may lead the patient to feel the negative feelings they had at the time of the trauma. Ehlers and Clark (2000) also propose that if the traumatic event seriously threatened the patients' view of themselves (eg. as capable), the general organisation of their autobiographical knowledge base would be disturbed.

Once activated by the processes described above the sense of current threat is accompanied by intrusions, re-experiencing symptoms, symptoms of arousal, anxiety and other emotional responses.

The sense of threat leads to behavioural and cognitive strategies that control the symptoms in the short-term, but serve to prevent cognitive change and therefore maintain the disorder in the long run. Ehlers and Clark (2000) argue that these strategies act on both the trauma memory and negative appraisals of the trauma. Problematic appraisals and the trauma memory are thought to be maintained by: trying not to think of the event; avoidance of reminders of the event; using alcohol or medication to control anxiety; giving up old activities; and rumination. Safety behaviours (i.e. actions individuals take to prevent or minimize anticipated further catastrophes) (Salkovskis, 1996) are thought to maintain the problematic appraisals as they prevent disconfirmation of the belief that the feared event will occur if they do not engage in the safety behaviour. Dissociation in response to the PTSD symptoms is thought to maintain the trauma memory as it impedes elaboration and integration of the memory into the autobiographical memory base. PTSD symptoms can also be directly increased by these strategies, for example thought suppression and selective attention to threat cues can increase the frequency of intrusions.

In addition to the variables that lead to and maintain PTSD, Ehlers and Clark (2000) identify background factors that are likely to influence all three of these variables. Characteristics of the trauma such as it being prolonged and unpredictable may exert an influence. Previous experiences of trauma and coping styles during this event may influence how the patient reacts to the current trauma. Low intellectual ability may be related to less conceptual processing (i.e. processing the meaning of the situation, processing it in an organised way and placing it in context) and greater data-driven processing (i.e. processing the sensory impressions). Prior beliefs, for example that no one could harm them may have an influence and state factors such as being intoxicated at the time of the trauma may influence their ability to process the trauma information.

In addition, cognitive processing at the time of the trauma is hypothesised to influence the nature of the trauma memory and negative appraisals of the trauma or sequelae. Ehlers and Clark (2000) identify mental defeat (i.e. perceived loss of all psychological autonomy, accompanied by the sense of not being human) as an example of an influence on appraisal of the trauma. They base this prediction on work by Dunmore, Clark, and Ehlers (1997) and Dunmore, Clark and Ehlers (2001) and Ehlers, Maercker and Boos (2000), who found mental defeat to be a correlate of PTSD. It is thought that data-driven processing as opposed to conceptual processing at the time of the trauma will increase the likelihood that the memory will be dominated by sensory impressions, be difficult to retrieve intentionally and there will be strong perceptual priming for accompanying stimuli. An inability to establish a self-referential perspective may affect the quality of the trauma memory by reducing the likelihood of it being integrated into other autobiographical memories. Dissociation (a sense of depersonalisation, de-realisation and emotional numbing) at the time of trauma is also thought to reduce the quality of the trauma memory. Ehlers and Clark (2000) suggest that dissociation is a complex concept and may also have similar qualities to data-driven processing and

lack of self-referent processing. Furthermore they make the observation that due to high levels of distress and anxiety individuals do not have enough cognitive capacity to evaluate whether propositions made during the trauma are true. They suggest that the propositions are stored in long term memory with a default 'true' value which could influence later appraisal of the memory. They cite the example of a rape victim who was repeatedly told she was ugly and was left feeling this was true.

Table 1 illustrates how the cognitive theories described in the above text appear to have informed the development of the Ehlers and Clark (2000) model. However, their model stands out from the other cognitive models because it draws together many of the strands that they identify into an integrated whole. In particular it provides clear areas for effective clinical intervention (Gillespie, Duffy, Hackman & Clark, 2002). The theory also lends itself to testing.

Table 1. Summary of cognitive theories that appear to inform the Ehlers and Clark's cognitive model

Authors, Date	Significant aspects of cognitive models that appear to inform Ehlers & Clark's Model
Horowitz,1973, 1986	Avoidance of trauma memories maintains PTSD.
	Recovery involves integration of trauma memory into everyday memory.
Janolf-Bulman,1985, 1992	Importance of prior beliefs.
	Predictability of world important.
Lang, 1979	Perceptual priming to trauma cues.
Foa et al., 1989, 1993, 1999	S-S and S-R associations are very strong for trauma material.
	Thinking errors interfere with integration of trauma memory.
	Avoidance of trauma cues maintain symptoms.
	Appraisal of others reactions, decline in previous activities all reinforce negative appraisal of self.
	Recovery requires integration of trauma memory and positive reappraisal.
Brewin, 1996, 2001	SAM/flashbacks occur because trauma memories have no context and so get feeling of current threat.
	Exposure works not by removing SAM but provides a more memorable memory.
	Cognitive processing during trauma given a neuropsychological explanation.

There are however, limitations to the Ehlers and Clark (2000) model. The authors do not claim to have developed an exhaustive list of background factors. However, one box (see figure 1.) contains a group of varied concepts from prior beliefs to the objective severity of the trauma. The particular contribution of these characteristics to the onset and severity of PTSD is not fully developed (Dalgleish, 2004).The model has been criticised for being too focused on individual appraisals and not the systemic influences of cultural context that may inform the meanings of those appraisals (Dick, 2000). Dalgleish (2004) in his extensive review of theories of PTSD notes that the emphasis on appraisals, although useful for cognitive therapy techniques, means that there is no representational space in the model for coding referential meaning. There is no equivalent in the Ehlers and Clark model of Brewin et al.'s (1996) VAMs. He suggests that it appears from the model that the representation of referential meaning is incorporated within the memory records. The problem with this is that when people appraise their verbal (referential) memories of the trauma they would inevitably activate the stimulus and response elements that are linked to the referential information in the same memory record. He notes that Ehlers and Clark (2000) provide three processes whereby the two are interconnected: firstly the information recalled from memory will be a function of the types of appraisals being generated; secondly, the nature of the recall of the trauma will influence the appraisals that are generated; finally, persistent negative appraisals will become part of the autobiographical memory record. Dalgleish (2004) also suggests that aspects of the model are difficult to test because they are not fully developed. He cites the example that although negative appraisals play a key role in maintaining PTSD the model does not specify a priori which appraisals are of particular risk nor how this might vary across different individuals. He suggests that the model would need to provide a fuller description of the representations that provide context for any appraisal. As a model for the development of persistent PTSD it predominantly consists of risk factors for the onset and maintenance of PTSD. From a clinical perspective this focuses the clinician on the negative processes that their client might be engaging in rather than the positive, protective aspects of client's responses to trauma. The model identifies certain behaviours and cognitions as 'maladaptive', such as avoiding thinking about the incident in an emotional way. However, the use of denial and avoidance has been found to be a useful strategy for some populations, for example paramedics, allowing them to think objectively in high stress situations (Janik, 1992, cited in Grevin, 1996). Evidently clinicians would have to use the model with caution and not remove coping strategies just because they are identified as 'maladaptive'.

Research into the Ehlers and Clark (2000) model of PTSD

Having reviewed the theoretical origins and context of the Ehlers and Clark (2000) model of PTSD, the research that has investigated this model will now be reviewed. The first Literature search conducted for this study used the following databases: PsycINFO, MEDLINE, EMBASE, AHMED, PsycArticles and Full Text (1992 – 2006, English Language), a Cited Reference Search on ISI Web of Science and extensive backwards referencing. The search focused on studies that have

specifically researched the Ehlers and Clark (2000) model. Table 2. provides a summary of this research. The quality of the studies investigating the Ehlers and Clark (2000) model vary and the following review will begin with the weaker, cross-sectional studies and go onto the more reliable findings from the longitudinal studies. The populations studied included student volunteers watching a video of a road traffic accident (RTA), RTA survivors, assault survivors and healthcare workers. The studies will be considered in order of the population that was investigated.

Steil and Ehlers (2000) used two cross-sectional designs to investigate the effects of road traffic accidents (RTA) on two samples of survivors. The groups were recruited via radio and newspaper advertising and were invited to talk to a journalist about their experiences. Each group differed on gender and injury severity. They found that the dysfunctional meanings of intrusions explained a significant proportion of the variance of the intrusion-related distress, strategies used to reduce the intrusions and PTSD severity in both studies. This finding was made more robust by the fact that it was not mediated by subjective accident severity and was the case when intrusion frequency and general catastrophic thoughts when anxious were excluded. PTSD severity was also found to correlate with use of rumination, thought suppression and distraction when having intrusions.

However, because they did not appear to measure or control for objective accident severity it is unclear whether this would have had an effect on the associations investigated. Despite the strength of having a relatively large sample (N = 159 & 138), they were self-selecting. It is conceivable that the participants in this study were qualitatively different to, for example, clinic samples and as such the generalisability of these findings are limited. Like the majority of studies into the Ehlers and Clark (2000) model, PTSD severity was assessed using self-report measures that could lead to inaccurate diagnoses, however the likelihood of this is reduced by the substantial cross-over between the self-report measure and clinical interviews. Finally, there was no indication of how long the delay was between the RTA and the participants filling in the initial questionnaires. It is likely that there would be some range in the time delay, resulting in memory bias particularly if the participants were still experiencing PTSD symptoms.

Halligan, Clark & Ehlers (2002) carried out two cross-sectional, analogue studies. Study 1 consisted of two groups of matched student volunteers. Both were shown a video of a real RTA and a week later were asked to perform a memory test and complete self-report questionnaires. One group consisted of students who had been instructed to process the incident in a conceptual manner and the second group had been instructed to process the incident using data-driven processing. In study 1 data-driven processing during exposure to distressing material was associated with the development of poor subsequent recall which is an aspect of PTSD-like memories. The proposed association in the Ehlers and Clark (2000) model between the presence of data-driven processing during the trauma and the development of PTSD was not found in this study in relation to analogue

PTSD symptoms. Study 2 consisted of two groups of student volunteers separated by their 'trait' cognitive processing styles assessed prior to group allocation. They were separated into data-driven and conceptual processing groups. In session 1, participants completed self-report measures and autobiographical memory questionnaire prior to watching the video. They were then shown the RTA video and 10 minutes later carried out a free recall task. In session 2, participants completed a symptom questionnaire and a video memory questionnaire. Data-driven processing was positively associated with the degree of self-reported disorganisation of memory. This was found both for the video and for a personal autobiographical event. Data-driven processing also predicted higher levels of analogue PTSD-like symptoms following the video. Self-reported memory deficits were also associated with analogue symptoms. However, study 2 did not replicate the study 1 finding that data-driven processing was associated with poor memory recall. This poses problems for the

Table 2. Summary of studies investigating the Ehlers-Clark model of PTSD

Author/Date	Population	Design	Findings
Steil & Ehlers, 2000	RTA survivors	2 Cross-sectional studies	Dysfunctional meanings of intrusions explained significant proportion of variance of intrusion-related distress, strategies used to reduce intrusions & PTSD severity. Not mediated by subjective accident severity & when intrusion frequency & general catastrophic thoughts when anxious were excluded. PTSD severity correlated with rumination, thought suppression & distraction during intrusions.
Halligan , Clark & Ehlers 2002	Student volunteers RTA video	Cross-sectional Study 1:	Data-driven processing when exposed to distressing material related to disorganised memories. No relationship between data-driven processing & analogue PTSD symptoms. No relationship between memory disorganisation & analogue PTSD symptoms.
		Study 2:	Data-driven processing related to disorganised memory & analogue PTSD symptoms. Memory disorganisation related to analogue PTSD symptoms.
Dunmore, Clark & Ehlers, 1999	Physical or sexual assault survivors	Cross-sectional	Factors associated with onset & maintenance: appraisal of the sequelae of the assault; dysfunctional strategies; & global beliefs impacted by assault. Factors associated with only onset: detachment during assault; failure to perceive positive responses from others; & mental undoing.
Halligan, Michael, Clark & Ehlers 2003	Assault survivors	Study 1:Cross-sectional	Data-driven processing, lack of self-referential processing and dissociation correlated with memory disorganisation, intrusive memories & PTSD. Ongoing dissociation and negative appraisals maintain PTSD symptoms. Peri-traumatic cognitive processing except data-driven correlated with memory disorganisation, intrusive memories & PTSD. None of the processing styles accounted for unique variance in memory disorganisation or intrusive memories.
Laposa & Alden, 2003	Emergency department personnel	Cross-sectional	Negative appraisals of the trauma & of intrusive recollections associated with increased PTSD severity. Peri-traumatic dissociation did not correlate with overall PTSD symptom severity. Peri-traumatic dissociation did correlate with the re-experiencing symptoms cluster.
Clohessy & Ehlers, 1999	Ambulance workers	Cross-sectional	Only mental disengagement & wishful thinking showed a relationship with PTSD symptom severity. Negative interpretations of intrusive memories, rumination & emotional numbing correlated with PTSD severity. Positive interpretations did not predict PTSD severity. Independent of intrusion frequency they explained distress caused by intrusions, their perception as uncontrollable, & use of strategies intended to control intrusions but prevent emotional processing & a change in meaning of trauma & intrusive memories.
Murray, Ehlers & Mayou, 2002	RTA survivors	Longitudinal	Persistent dissociation is a stronger predictor of chronic PTSD than dissociation during the accident. Dissociation during the trauma predicted PTSD symptoms over & above pre-accident tendency to dissociate. Dissociative symptoms predicted later PTSD symptoms over & above what could be predicted from other PTSD symptoms. Data-driven processing correlated with PTSD symptoms & remained when dissociation was controlled for. Rumination strongest predictors of PTSD, at 4 weeks & 6 months when dissociation was controlled for. Memory fragmentation positively related with PTSD severity & correlated with initial dissociation & data-driven processing.

Author/Date	Population	Design	Findings
Ehlers, Mayou & Bryant, 1998	RTA survivors	Longitudinal	Excessive negative appraisal of traumatic event, initial PTSD symptoms & trauma induced changes in self, correlated with PTSD severity & persistence. Negative appraisals of intrusive thoughts & recollections of event associated with PTSD. Negative appraisals of intrusions associated with use of maladaptive strategies. Strategies also linked to more severe PTSD symptoms. Persistent medical problems among most important predictors of chronic PTSD.
Dunmore, Clark & Ehlers, 2001	Physical or sexual assault survivors	Longitudinal	Cognitive factors predicted PTSD severity & persistence: peri-traumatic cognitive processing; appraisal of assault sequelae; negative beliefs about work & self; maladaptive behavioural strategies.
Halligan, Michael, Clark & Ehlers 2003	Assault survivors	Study 2: Longitudinal	Cognitive factors that predicted PTSD: peri-traumatic cognitive processing; persistent dissociation; deficits in trauma memory; appraisals of trauma memories. Assault severity explained 22% of symptom variance; cognitive processing, memory disorganisation and appraisals increased prediction accuracy to 71%.
Michael, Ehlers, Halligan & Clark (2005)	Assault survivors	Longitudinal	Presence of intrusive memories & their frequency only accounted for 9 and 8 % of variance respectively for PTSD severity at 6 months post assault. The 'here and now' quality of intrusions, distress caused & their lack of context explained 43% of PTSD severity. Additional predictors of PTSD included rumination about the intrusions & the ease with which the intrusive memories could be triggered.

strength of the conclusions from this study. The authors suggest that the difference may have been due to the time delay of 1 week for study 1 compared to immediate assessment of recall in study 2. They suggested that data-driven processing may affect long-term memory more than short-term because the consolidation of information into the memory base is an extended process. If this is the case the fact that this study is cross-sectional and only considers these mechanisms up to a week after the 'trauma', suggests that any causal relationship between data-driven processing and persistent PTSD symptoms cannot be considered. Brewin and Holmes (2003) have criticised studies that instruct participants to process material in a certain way as this method tends to be ineffective. However, Halligan et al. (2003) have argued that it is difficult to infer causal effects without controlling the variables in an experimental setting. In addition, the sample size for both studies was small, with the highest group consisting of 31 students. Parametric tests were used to compare the groups and a sample of 30 or less does not meet the minimum sample size for statistical analysis (Comrey & Lee, 1992). This fact and the student nature of the sample limits the generalisability of these findings and this aspect of the model requires further testing with different populations, over time. Despite these limitations this study is one of the few that looks at the mechanisms within the Ehlers and Clark (2000) model, by investigating the *mechanism* between peri-traumatic processing, memory and PTSD symptoms.

Dunmore, Clark and Ehlers (1999) investigated factors associated with the onset and maintenance of PTSD. Factors associated with the onset of PTSD were investigated by comparing victims of physical or sexual assault who did not have PTSD with those who did, and the maintenance factors were investigated by comparing victims recovered from PTSD and those with persistent PTSD. Cognitive factors significantly associated with the onset and maintenance of PTSD included appraisals of aspects of the assault itself (mental defeat, mental confusion, appraisal of emotions), appraisal of the trauma sequelae (appraisal of symptoms, perceived negative responses from others, feel permanently changed) and dysfunctional strategies (avoidance and safety seeking) and global beliefs changed by the assault. Cognitive factors that were only linked to the onset of PTSD included detachment during the assault, a failure to perceive positive responses from others and trying to mentally undo the assault. These findings remained significant when variations in perceived and objective incident severity were controlled. Despite these significant findings the quality of the study is compromised due to it being cross-sectional and retrospective. Therefore, the authors comment that they cannot confidently assert that cognitive variables are predictors of the onset and maintenance of PTSD because there was no concurrent investigation of persistent symptoms. The time delay between the assault and initial questionnaire being completed was at least 3 months and memory bias could have occurred. This bias could have led for example, to an

overestimation of the incident severity and its effects. The sample was comparatively small with a total of 92 participants spread across 4 groups, reducing the power of the analyses to detect true findings. This could potentially result in an increased likelihood of Type I or II errors. The sample was self-selecting and the sampling technique included radio and newspaper adverts. The sample is potentially biased and the generalisability of these findings limited. Finally, subjects were excluded if the assault was in the context of continuing domestic violence, limiting the generalisability of the findings to single incident trauma, rather than individuals who experience ongoing exposure to trauma.

Halligan, Michael, Clark & Ehlers (2003) investigated the Ehlers and Clark (2000) model with sexual and physical assault survivors, using both a cross-sectional and longitudinal design. The initial phase of their study was cross-sectional and they found that peri-traumatic cognitive processing, persistent dissociation, memory deficits and negative appraisals of the trauma and its sequelae *predicted* PTSD symptoms. Persistent dissociation and peri-traumatic cognitive processing have also been found to contribute to the *maintenance* of PTSD symptoms, in particular the re-experiencing cluster. Despite their assertion that persistent dissociation and negative appraisals of the trauma memories were involved in the maintenance of PTSD, there is no exploration of how these factors maintain PTSD because no analyses were used to investigate how they relate to one another. The retrospective and cross-sectional nature of this part of the study compromised these results. Memory bias is likely to have occurred as participants were asked to rate their reactions to assaults that on average took place 10 months previously. The authors note that current symptomatology can inflate the perception of event severity and emotional reactions (Zoellner, Sacks & Foa, 2001). The longitudinal phase of this study will be outlined below.

It is apparent that most recent PTSD research has looked at victims of traumatic events that are out of the ordinary for them. Laposa & Alden's (2003) study of emergency room personnel is one of only two studies (also, Clohessy & Ehlers, 1999) that investigated the Ehlers and Clark (2000) model among individuals for whom witnessing or experiencing horrifying events are routine aspects of their jobs. Their study was retrospective and cross-sectional and the self-selecting sample consisted of 51 Canadian emergency department personnel (ED), who were predominantly female. They found 12% of the participants met full DSM-IV criteria for PTSD, using the full version of the Posttraumatic Diagnostic Scale (PDS) (Foa, 1995). When the aspect of the PDS that assesses for criterion A, E and F[1] were removed leaving only the three PTSD symptom clusters (re-experiencing, avoidance and hyper-arousal) then the rate of PTSD symptoms increased to 20%. Laposa and Alden (2003) note that many studies measure PTSD prevalence using the Posttraumatic Stress Symptoms Scale (PSS) (Foa, Riggs, Dancu & Rothbaum, 1993) or the Impact of Events

Scale (IES) (Horowitz, Wilner & Alvarez, 1979) which only measure the three symptom clusters and not criterion A, E and F, therefore running the risk of inflated PTSD prevalence rates. Conversely, Clohessy and Ehlers (1999) reported that the PSS showed more conservative diagnoses than the Structured Clinical Interview (SCID; Spitzer, Williams, Gibbon & First, 199) so the limitation of inflated PTSD rates is debatable. Clohessy and Ehlers (1999) found that negative appraisals of the trauma and of intrusive recollections were associated with increased rates of PTSD severity. They investigated relationships between factors in the model and found that negative appraisals and peri-traumatic processing correlated with re-experiencing the trauma (i.e flashbacks), but not with overall PTSD symptom severity. Interestingly they found that there was no significant difference between those participants who witnessed the incident and those who experienced it. This is particularly pertinent to hospital and ambulance staff who are as likely to witness a traumatic incident as they are to personally experience it.

Laposa and Alden's (2003) study provides confirmation for some of the aspects of the Ehlers and Clark (2000) model in the context of emergency department personnel. However, the Ehlers and Clark (2000) model predicts that low intellect and unpredictable trauma are potential risk factors for PTSD. Yet these individuals were well-trained and in a controlled environment and some still developed PTSD. Despite the importance of testing the Ehlers and Clark (2000) model in a healthcare setting where repeated trauma is possible, there are still some limitations to the study. The sample size was very small and despite making adjustments for this when analyzing the proportions of people who met PTSD criteria, only minimal criteria were met for regression analysis (Comrey & Lee, 1992). In addition, the sample primarily consisted of female nursing staff and as such would need to be replicated with male ED personnel. However, Clohessy and Ehlers' (1999) study of predominantly male ambulance workers reported similar prevalence figures for PTSD. A response rate of 44% was obtained and although this is a common level for responses in survey research, the researchers cannot be sure if the response set is biased. Finally, the frequencies of the most upsetting events were displayed and 'Threatened physical assault of self' shared the top 2 most distressing incidents alongside 'Providing care to a patient who is a relative/close friend and is dying or in serious condition'. However, interestingly they do not mention this in the summary text below, focusing instead on multiple casualties and continue not to mention violence and aggression in the rest of their study. These ratings of the relative impact of the different types of trauma point to a gap in the Ehlers and Clark (2000) model. The model prioritises objective trauma severity ratings and this may miss the subjective distinctions made by victims of trauma.

Clohessy and Ehlers (1999) is the only study found in this literature search to investigate ambulance personnel in relation to the Ehlers and Clark (2000) model. Their cross-sectional study had a sample

of 56 British ambulance workers, predominantly male. Twenty-one percent of ambulance workers met DSM-III-R criteria for PTSD, measured by the PSS and 22% met screening criteria for psychiatric symptoms measured by the General Health Questionnaire (GHQ). From discussion with ambulance workers and reading the relevant literature the researchers compiled a list of potential stressors that contributed to overall distress for ambulance workers. This list did not include threats of, or actual violence and aggression. They found that high levels of 'background factors' such as time pressure and shift work contributed to the distress of ambulance workers. This study established specificity by finding that only negative interpretations of intrusive memories, not positive ones, were predictive of PTSD. This is in line with previous studies that found response to intrusions predictive of PTSD (Steil & Ehlers, 2000; Ehlers et al., 1998). Wishful thinking, i.e. cognitive avoidance of trauma memories, was the only cognitive strategy that was related to PTSD. Professional attitudes and positive reinterpretation, often associated with successful coping in this population, were not associated with PTSD. Dissociation in relation to trauma memories correlated with PTSD severity, and the authors suggested that emotional numbing in response to intrusions was more associated with PTSD than feeling detached. The cross-sectional nature of the study meant that it was limited to the participants' recall of traumatic incidents, leading to possible recall bias and the researchers could not explore the interaction of the factors within the model over time. The sample size was particularly small (N=56) for regression analysis, leading to potential concerns regarding the power of their analyses. In addition, the authors noted that the self-selecting sample could have led to bias, because those who felt the study was important and therefore took part might have done so because they had experienced PTSD. They also noted that the ambulance personnel may have had concerns over confidentiality and feared that their jobs would be at risk if their vulnerabilities were identified. The authors comment that significant underreporting of the psychological impact of work on emergency service personnel is well documented in the literature (e.g. Gibbs, Drummond & Lachenmeyer, 1993 In Clohessy & Ehlers, 1999).

Summary

From the cross-sectional, retrospective studies it is evident that the Ehlers and Clark (2000) model has been tested on various populations, and in both experimental and field settings: student volunteers; RTA survivors; sexual and physical assault survivors; emergency department personnel; and ambulance workers. This provides a range in the frequency of exposure to trauma and in the severity of the traumatic incident.

In the studies that measured self-report PTSD prevalence rates, the figures included 12% for ED personnel, 22% for ambulance personnel and 23.1% for RTA survivors. The cognitive factor that were found to *predict* PTSD-like symptoms amongst student volunteers following a video of an

RTA and PTSD amongst assault survivors was peri-traumatic cognitive processing (Halligan et al., 2003; Halligan et al., 2002). Additional predictive cognitive factors for assault survivors included: persistent dissociation and negative appraisals of the trauma and its sequelae (Halligan et al., 2003). For healthcare workers cognitive predictors included: negative interpretation of intrusions and maladaptive cognitive strategies, particularly wishful thinking (not professional attitude or positive reinterpretation) (Clohessy & Ehlers, 1999). Predictive factors associated with the trauma memory for student volunteers and assault survivors were deficits in memory recall. However, the former study did not replicate this finding in the second phase of their study (Halligan et al., 2002; Halligan et al., 2003). An additional predictor for healthcare workers was background factors such as gender, which only predicted distress (Laposa & Alden, 2003).

The *onset and maintenance* of PTSD for assault survivors was found to be associated with negative appraisals of the trauma and its sequelae, maladaptive behaviour and cognitive strategies and changed global beliefs about the incident (Dunmore et al., 1999). Maintenance of the re-experience cluster of PTSD for assault survivors was associated with persistent dissociation and peri-traumatic cognitive processing (Halligan et al, 2003). The *onset* of PTSD for assault survivors was found to be associated with peri-traumatic detachment and failure of others to respond (negative appraisal of trauma sequelae) (Dunmore et al., 1999). Negative appraisals of intrusive trauma memories were found to account for variance in maladaptive cognitive and behavioural strategies to reduce the intrusions (Ehlers & Steil, 2000).

The *severity* of PTSD symptoms was found to be associated with dysfunctional meanings of intrusions for RTA survivors (Steil & Ehlers, 2000). Peri-traumatic cognitive processing, negative appraisals of trauma and trauma sequelae, for healthcare workers, were found to be associated with the re-experiencing cluster of PTSD not overall PTSD severity (Laposa & Alden, 2003).

The *relationships* between three aspects of the model that were found included: data-driven processing, trauma memories and analogue PTSD-like symptoms (Halligan et al., 2002); and peri-traumatic cognitive processing, negative appraisals of the trauma and its sequelae and PTSD severity (or just the re-experiencing cluster) (Laposa & Alden, 2003). Amongst healthcare workers no differences in PTSD symptoms were found between witnessing and experiencing the incident (Laposa & Alden, 2003) and additional stressors like shift work and time pressure contributed to participant distress (Clohessy & Ehlers, 1999).

A review of the cross-sectional studies sheds some light on the Ehlers and Clark (2000) model, despite the findings being limited by their design. Longitudinal studies have, in some cases replicated the findings of the weaker, cross-sectional studies. The longitudinal studies also consider additional factors in the model and establish greater certainty in the findings and understanding of the model.

Murray, Mayou and Ehlers (2002) conducted two prospective, longitudinal studies of RTA survivors in outpatient and ward based clinics. They found that all measures of dissociation predicted PTSD severity at 6 months. Dissociation predicted PTSD over other symptom clusters. In addition memory fragmentation, data-driven processing and in particular rumination also predicted PTSD. They found that a dissociative response to trauma appeared in part to be independent of pre-existing dissociative traits. This was the first prospective study to provide evidence for the role of memory fragmentation in PTSD. The rapid follow-up of participants after the accidents of 24 hours on the wards and 48 hours in the outpatient clinics was likely to have led to a major reduction of any recall bias. The sample size for the outpatient clinic was good (N = 140), for the inpatient wards this reduced to N = 21 over the 6 time points. This meant that the regression analysis could only be conducted on the outpatient sample and further limits the generalisability of the findings. The authors acknowledge that the PTSD ratings were based on self-report and as such were less accurate at diagnosing PTSD than clinical interviews.

Ehlers, Mayou and Bryant (1998) carried out a prospective, longitudinal study of a large number (N= 967) of RTA survivors. The participants were assessed within 8 days of the incident and again at 3 months and 1 year post-incident. They found that the *prevalence* of PTSD at 3 months was 23.1% and at 1 year was 16.5%. Various background factors were associated with *persistent* PTSD and included: some objective measures of trauma severity; perceived threat; dissociation during the accident; female gender; previous emotional problems; and litigation. Cognitive factors that were associated with the *maintenance* of PTSD included: negative interpretations of intrusions; rumination; thought suppression; and anger cognitions. Significant predictors of PTSD at 1 year were negative interpretations of intrusions, medical problems and rumination at 3 month follow-up. This study boasts an excellent sample size (N= 967) and minimal time delay (24 and 48 hours) in participation in the study following an accident, providing good power for the regression analyses and minimising recall bias. The authors also note a high rate of PTSD symptoms with more than 50% meeting DSM-IV criteria for intrusive re-experiencing, hyper-arousal or distress caused by the symptoms. The authors suggest that this is noteworthy as many did not suffer physical injuries, indicating that injury severity is not the most important indicator of who requires psychological support. They used the PDS self-report measure to assess PTSD and the use of this measure has

been criticised because it lacks criteria A, E and F from DSM-IV criteria for PTSD. The use of the full PDS scale would avoid inflated PTSD prevalence rates (Laposa and Alden 2003). However, their study excluded the disability aspects of the scale, and although they do not explain why, replaced it with ratings on how much work, housework and social activities had been interfered with following the accident. This goes some way to enforcing their findings that the sample had a high rate of PTSD in comparison to the lower level of injury.

Dunmore, Clark and Ehlers (2001) replicated their earlier cross-sectional study (1999) using a longitudinal prospective design. A sample of 57 physical and sexual assault victims were assessed within 4 months of the assault and again at 6 and 9 months post-assault. They found that the same cognitive variables in their 1999 study *predicted* PTSD severity, this time at 6 and 9 months post-assault. Cognitive factors associated with PTSD severity included appraisals of aspects of the assault itself (mental defeat, mental confusion, appraisal of emotions), appraisal of the trauma sequelae (appraisal of symptoms, perceived negative responses from others, feel permanently changed), dysfunctional control strategies (avoidance and safety seeking) and negative beliefs about self and the world. These findings remained significant after controlling for gender and perceived assault severity. The authors admit there were various limitations to this study. The most striking was the small sample size, the large number of factors and their use of regression analysis. They note that the risk of Type 1 errors was increased so there could be some false associations with PTSD severity and cognitive variables. They also comment on the use of a self-report measure for PTSD (PSS-SR Foa, Riggs, Dancu & Rothbaum, 1993) and the limitations of this in comparison to clinical interviews. However, they note that there is good cross-over with diagnostic interviews, but misdiagnosis was still conceivable and problematic considering the aims of the study were to predict PTSD severity. The authors note that the assessment of the cognitions before, during and after the assault were carried out relatively retrospectively i.e. within 4 months of the assault. They therefore cannot conclusively say that the current state of the individuals with PTSD had not influenced their recall of their earlier cognitions. The generalisability of the sample is again limited due to the focus on assault victims and exclusion of victims exposed to ongoing violence.

The only study that has looked at whether the trauma memory *mediates* the relationship between peri-traumatic cognitive processing and PTSD, using a longitudinal design was the second phase of the Halligan et al. (2003) study with sexual and physical assault survivors detailed above. They ran a prospective longitudinal study to rectify the weakness of the cross-sectional study, i.e. the memory bias caused by current symptoms. Peri-traumatic cognitive processing (dissociation, data-driven processing, and lack of self-referent processing) was found to be associated with trauma memory disorganisation and *predicted* PTSD symptoms. The strength of their conclusions were

increased by this replication, however they report that the first questionnaires were filled in within 3 months of the assault. As a result those filling in the questionnaires close to 3 months after the assault could have also been affected by memory bias like the retrospective, cross-sectional study. Both studies had quite low sample sizes (N = 81 & 73) and were based on physical and sexual assault survivors, limiting the generalisability of these findings. The second study used regression analyses, however, the power of this analysis could have been compromised by the large number of factors being measured and the relatively small sample size.

Michael, Ehlers, Halligan and Clark (2005) used the cross-sectional and longitudinal data with sexual and physical assault survivors from the previous study (Halligan et la., 2003) and submitted it to further analysis. They found that the presence of intrusive memories and their frequency only accounted for 9 and 8 % of the variance respectively for PTSD severity at 6 months post assault. However, the 'here and now' quality of the intrusions, the distress caused by them and their lack of context explained 43% of PTSD severity. The distress caused by intrusions has also been found to be predictive of PTSD in retrospective, cross-sectional studies with ambulance workers (Clohessy & Ehlers, 1999) and RTA survivors (Steil & Ehlers, 2000). Additional predictors of PTSD included rumination about the intrusions and the ease with which the intrusive memories could be triggered. The finding that rumination about intrusive memories predicts PTSD has also been replicated in retrospective, cross-sectional studies with ambulance workers (Clohessy & Ehlers, 2000) and RTA survivors (Murray, Ehlers & Mayou, 2002; Ehlers & Steil, 2000). The authors highlight the limitation of using simple rating scales to measure distress caused by the intrusions, however they note that a considerable amount of variance for PTSD severity was accounted for. Concerns over memory bias are similarly applied to this study due to the delay in initial questionnaire completion. This study stresses the importance of measuring the quality of intrusions and rumination about them, not just their presence when investigating PTSD severity.

Summary

The longitudinal, prospective studies, like the cross-sectional studies, tended to focus on the prediction of PTSD and PTSD severity and associations between single variables in the model with PTSD rather than the relationships or mechanisms between the variables, with one exception. Negative appraisals of intrusions, rumination, particularly about intrusions and the quality of the intrusions were all cognitive factors found to predict PTSD and PTSD severity for both RTA and assault victims (Michael et al., 2005; Ehlers et al., 1998). The presence or frequency of the intrusions were not found to be predictive for assault survivors (Michael et al., 2005). Other cognitive factors associated with the prediction of PTSD severity for assault survivors were: appraisals of aspects of the assault itself, appraisal of the trauma sequelae, dysfunctional control

strategies and negative beliefs about self and the world (Dunmore et al., 2001). Additional cognitive factors that were found to predict PTSD amongst RTA survivors were: all measures of dissociation; data-driven processing; and rumination (Murray et al., 2002) Background factors and memory fragmentation were also found to predict persistent PTSD for RTA survivors (Ehlers et al., 1998; Murray et al., 2002). Maladaptive cognitive strategies including, rumination about intrusions, dissociation, and thought suppression as well as anger cognitions were found to *maintain* PTSD amongst RTA survivors (Ehlers et al., 1998). Only one study investigated a mediation relationship and it was found that for assault survivors, memory disorganisation *mediated* the relationship between peri-traumatic cognitive processing and PTSD symptoms (Halligan et al., 2003).

While it is evident that cross sectional and longitudinal research has provided good support for a number of the components of the model, studies reporting evidence for the validity of the mechanisms within the model are sparse. Laposa and Alden (2003) note that the majority of studies into the Ehlers and Clark (2000) model tend to focus on only one aspect of the model. For example, only one study measured appraisal and dissociation simultaneously (Halligan et al., 2003). However, there are studies that have solely focused on relationships between a factor in the model and the prediction of PTSD onset, maintenance or severity. Exceptions amongst the cross-sectional studies are Steil and Ehlers (2000), Clohessy and Ehlers (1999) and Ehlers et al. (1998b) who found that negative interpretations of intrusive memories about the trauma correlated positively with an increase in the use of strategies - namely rumination and thought suppression. Laposa and Alden (2003) also investigated a relationship between factors in the model and found that negative appraisals and peri-traumatic processing correlated with re-experiencing the trauma (i.e flashbacks). The only longitudinal study that investigated and found a relationship between variables in the model was by Halligan et al. (2003). Specifically, a relationship was found between peri-traumatic processing, traumatic memory and PTSD symptoms. Other theorists have looked at mediators in relation to PTSD, but not with respect to the Ehlers and Clark's (2000) model. Gershuny, Cloitre and Otto (2003) explored which variables may mediate the relationship between peri-traumatic dissociation and PTSD symptoms. The authors found that fears about death and losing control during the event mediated this relationship. However, this study like many others, used retrospective reports of peri-traumatic processing. The reports could be biased by current PTSD symptoms and inflate the degree of association between PTSD symptoms and peri-traumatic processing. The study also assessed a range of traumatic incidents and as such these findings may be different if they used, for example only assault victims. Although this study was not explicitly testing the Ehlers and Clark (2000) model, these findings help ascertain why certain variables

predict the occurrence and severity of PTSD, and can be used to inform interventions that address processes that contribute to the development and/or maintenance of PTSD symptoms.

Summary of PTSD Prediction Literature

The studies investigating the Ehlers and Clark (2000) model of PTSD involve making predictions about PTSD onset and maintenance as well as some investigation of the mechanism proposed within the model. The wider literature base investigating the prediction of PTSD generally, not just in relation to Ehlers and Clark (2000) model, is extensive and has been reviewed in two rigorous meta-analytical studies (Brewin, Andrews & Valentine, 2000; Ozer, Best, Lipsey & Weiss, 2003). The key findings from these reviews will now be outlined to provide a full picture of what is know about PTSD prediction.

Brewin et al. (2000) looked at 77 articles in their meta-analysis and found that three categories of risk factors emerged: gender/age/race; education/previous trauma/general childhood adversity; and psychiatric history/childhood abuse/family psychiatric history. The found there was significant heterogeneity in the results. Gender/age/race predicted PTSD in some populations but not in others. Education/previous trauma/general childhood adversity predicted PTSD more consistently but to a varying extent depending on the population and methods used. The most uniform predictors were psychiatric history/childhood abuse/family psychiatric history. Individually the effect sizes were modest but the factors during or after trauma, including trauma intensity, had stronger effects than pre-trauma factors. But a lot of studies retrospective and this would have inflated the impact of these variables.

The authors suggested that the degree of the predictive effects differed systematically according to sample and study characteristics. They agued that it was hard to disentangle the effects of these moderator variables. The moderators were: military versus civilian type of trauma; gender; retrospective versus prospective design; analyses based on presence/absence of diagnosis versus continuous symptoms score; PTSD assessed with interview or questionnaire; childhood versus adulthood traumas.

In addition to the confound of the moderator variables there were three demographic variables (gender, race and age) that had no effect in some of the subsets. They argue that there needs to be caution when looking for pre-trauma predictors of PTSD that will be valid across all populations. There were also differences found in different populations (i.e. civilian and military) and suggest that there needs to be a single risk factor model that is used for civilian and military populations. In conclusion, the findings point to heterogeneity of the disorder in different settings and warn against

building a vulnerability model for all cases of PTSD at this time. This conclusion undermines the Ehlers and Clark (2000) model that is evidently a vulnerability model that is proposed for use with all populations.

The second meta-analytical study was conducted by Ozer et al. (2003). Their aim was also to identify risk factors that predict PTSD or PTSD symptoms. Sixty-eight studies met criteria for meta-analysis and these included all the studies that Brewin et al. (2000) used as well as 21 others. Seven predictors were focused on: prior trauma; prior psychological adjustment; family history of psychopathology; perceived life threat during trauma; post-trauma social support; peri-traumatic emotional responses; and peri-traumatic dissociation. Ozer et al. (2003) did not look at demographics because they argued that, contrary to Ehlers and Clark's (2000) model, they are not plausibly linked to the psychological processes of a trauma response. This decision was independently supported by Brewin et al.'s (2000) study that found demographic variables were not strong predictors of PTSD. They specified that the literature was dominated by retrospective studies and so this was the focus of their analyses. They focused on factors that could be predictors of PTSD and they clarify that they could make no claims about any causal links.

Like Brewin et al. (2000) they found that peri-traumatic psychological processes, not prior characteristics, were the strongest predictors of PTSD. The poorest predictors produced smaller effect sizes (<0.20) and had less association with the traumatic incident (i.e. characteristics of individual and their life history). Those factors with greater effect sizes (>0 .20) were more closely related to the traumatic incident (ie. about the event itself and support afterwards).

The best predictors were still only able to account for up to 20% of the variance. The authors hypothesise that factors unique to the individual and the nature of the exposure contribute significantly to who gets PTSD. However, they also claim that there were replicable and relatively stable predictive relationships, suggesting there is a phenomenon to be studied.

Various moderators were also identified, one of which was similar to that in the Brewin et al. (2000) meta-analysis, that was the method of assessment. However the two most salient moderators for predicting PTSD were different to those in the Brewin et al.'s (2000) study and were: the type of event; and the time elapsed since the traumatic incident.

Ozer et al. (2003), like Brewin et al. (2000), found that social support was a strong predictor, however in Ozer et al.'s (2003) study this increased when the time elapsed was greater than 3 months. They hypothesise that this could either be because of a cumulative effect of the support or because support is better after some time has elapsed and not immediately after the incident. This

latter interpretation may be supported by the findings that formal help immediately after a traumatic incident in the form of de-briefing is counterproductive (NICE Guidelines, 2005), although there are evident differences in formal and informal support. The discussion around social support suggests that it is a protective factor, not a risk factor. The authors of both meta-analyses, fail to clarify that for a protective factor to be valid it needs to occur in the presence of a risk factor and actively reduce the impact of the risk factor(s) (Rutter, date). Ozer et al. (2000) conclude that the features that differentiates PTSD form other disorders and general distress following a traumatic incident are the images and emotions that are directly linked to the event, rather than having a random content, and are not easily dispelled.

In summary, the meta-analyses were primarily based on retrospective studies that relied on self-report measures. This picture not surprisingly echoes that for the studies investigating the Ehlers and Clark (2000) model, as many of them would have been included in the meta-analyses. As a result the findings are limited as no causal links can be made and would require a stronger body of longitudinal prospective studies. The meta-analyses, like the studies investigating the Ehlers and Clark (2000) model, focused on factors closely related to the incident or after it, rather than background factors such as gender. However, those studies that did study these variables, contrary to Brewin et al.'s (2000) findings and Ozer et al's predictions, did find some association with PTSD (e.g Ehlers et al., 1998; Murray et al., 2002). The studies investigating the Ehlers and Clark (2000) model did however offer some support for this vulnerability model with a variety of different populations, something Brewin et al. (2000) warned against.

PTSD and healthcare workers

As has been discussed above only two studies (Clohessy & Ehlers, 1999; Laposa & Alden, 2003) have investigated the Ehlers and Clark (2000) model with healthcare staff who often experience more than one traumatic incident. Examination of the Ehlers and Clark (2000) model in different settings and populations is important to determine whether findings that cognitive factors contribute to PTSD are robust to changes in context. The exceptions detailed above both used small samples and retrospective, cross-sectional designs. Laposa & Alden (2003) suggest that the lack of focus on this population in the literature might reflect the first diagnostic requirement of PTSD that the event be "outside the normal range of human experience model" (American Psychiatric Association, 1980). The diagnostic criteria was then extended to witnessing or being confronted with an event that threatens one's own or others' lives and produces a response of "intense fear, helplessness, or horror" (American Psychiatric Association , 1987, 1994). Laposa & Alden (2003) argue that there is a need to study the frequency with which PTSD develops in populations who experience routine distressing events that are witnessed as well as experienced. The lack of research into ambulance

workers in particular has been suggested to be because of stereotypes of them as strong, capable helpers, not helpless victims (Short, 1979, as cited in Clohessy & Ehlers, 1999). When research into this population has occurred its primary focus has been on disaster work rather than on the effects of everyday duties, despite them being found on occasion to be as distressing (Marmar, 1996).

The mental health of healthcare workers has been a concern considering the extensive pressures of their routine work. High levels of mental health symptoms and 'burn-out' have been recorded in this population (e.g. Ramirez, Graham & Richards, 1996, as cited in Alexander & Klein, 2001). The percentage of ambulance personnel who met GHQ case-ness for psychological symptoms has been found to be 22 – 32% (Alexander & Klein, 2001; Bennett, Williams, Page, Hood & Woollard, 2004; Clohessy & Ehlers, 1999) and 21% for NHS consultants (Blenkin, Dreary & Sadler, 1995, as cited in Alexander & Klein, 2001) compared to 18% of the general population (Hardy, Shapiro & Borrill, 1997, as cited in Alexander & Klein, 2001). Fifty-three percent of ambulance personnel have been found to meet criteria for recent mental disturbance (Rentoul & Ravenscroft, 1993). Prevalence rates for depression amongst ambulance workers have been found to be between 2.3% - 15% (Bennett et al., 2004; Regehr, Goldberg & Hughes, 2002) and anxiety levels have been found to be at 22%. Both were measured on the HADs which has a cut-off score of 11 or more indicating a "probable" diagnosis of clinical anxiety and depression (Bennett et al., 2004). The prevalence rates for PTSD in ambulance staff, nationally and internationally, have been found to be between 15 – 22% and for nurses 12 - 20% met criteria for PTSD and 33% reported symptoms of PTSD (Alexander & Klein, 2001; Clohessy & Ehlers, 1999; Hafeez, 2003; Laposa & Alden, 2003; Laposa, Alden & Fullerton, 2003; Grevin, 1996; Rentoul & Ravenscroft, 1993). This is compared to PTSD rates for the general population of 8% (Kessler, 1995). Evidently this population of healthcare workers face ongoing stressors at work that have significant effects on their mental health. The effects of work stressors have not only been found to be detrimental to the individual worker but to the organisations that employ them, with issues of early retirement and absenteeism (e.g. Young & Cooper 1999; Rodgers, 1998; Mitchell & Dyregron, 1993) and detrimental to relationships with families and friends, e.g. for ambulance workers (Brough, 2005).

Violence and aggression in the workplace

The majority of studies investigating PTSD and other psychological stressors amongst healthcare workers, particularly studies into ambulance personnel, focus on vicarious trauma (e.g. Rothschild, 2006) and trauma from gory or distressing scenes. No published studies were found in the literature search for this thesis that investigated the effects of violence and aggression on healthcare staff with reference to the Ehlers and Clark (2000) model. The only study that has considered violence and aggression against healthcare staff with reference to Ehlers and Clark (2000) is an unpublished

thesis (Salter, 2003). Salter (2003) investigated factors that predicted PTSD symptoms following violence against healthcare staff. He found that disorganised memory, data-driven processing, state dissociation, self-referent processing, appraisal of PTSD symptoms, trait dissociation and avoidant behaviour were associated with PTSD symptoms 4 months post-assault. Barring this example, very few studies have focused on the effects of violence and aggression against healthcare professionals. Those studies that have looked at workplace violence, have tended to focus on general stress levels and 'burn-out' rather than PTSD specifically (e.g. Wastell, 2002). Those that have looked at violence and aggression in relation to PTSD amongst healthcare workers have found it is associated with the enduring threat of violence, as well as the more obvious incident of actual violence (Mezey & Shepherd, 1994). However, the rates of violence and aggression against NHS staff have recently come to government and public attention, with June 2006 being named 'NHS security awareness month'. The 1998 – 1999 NHS Executive found 65, 000 reported incidents of violence against NHS staff in 1 year and predicted an increase to 84, 273 by 2000-2001 (Peggs, 2000). The current figures for reported physical assaults against NHS staff for 2005 were less than predicted, at 60, 385 (Aldrich, 2006). Despite the fact that there has been no increase in the number of reported incidents of violence, there is evidently still a significant security problem for NHS staff. The Nursing Times and Royal College of Nursing reported that 7/10 nurses felt safer on the streets than in their hospitals (ParamedicUK, 2004). Furthermore, Unison reported that nearly 70% of ambulance workers had been victims of violence and aggression in 1998 (ParamedicUK, 2004). These high levels of violence and aggression are not unique to the UK, with 94% of U.S. emergency department staff reporting verbal harassment and 48% reporting being assaulted (McQuenn, Gates & Ross, 2005). Violence and aggression is not unique to healthcare workers, with 90% of American fire-fighters, who had some paramedic duties, reported as being victims of violence and aggression throughout their career (Pozzi, 1998). Fire-fighters reported violence and aggression as the most stressful part of their job out of 13 stressors (Pozzi, 1998). UK police officers have also rated violence and aggression as the second highest stressor in their role (Dick, 2000).

The National statistics on the levels of violence and aggression are evidently based on *reported* rates, however there are findings that suggest that many incidents go unreported, with up to 65% of incidents not registering on official figures (McQueen et al., 2005). Verbal aggression and minor physical incidents had particularly low rates of reporting, despite findings that indicate equal levels of distress from these types of incidents (Walsh & Clarke, 2003). However, when verbal aggression was reported the number of incidents was not surprisingly, higher than that for physical aggression. For example, the London Ambulance Service in 1999-2000 reported 526 physical assaults and 924 verbal assaults (Nanuwa et al., 2004). The levels of under reporting combined with the focus on physical rather than verbal aggression suggest that the problem of workplace violence and

aggression against NHS staff is even greater than the official figures suggest. It has been found amongst police officers that it is the perceived threat and meaning that the incident of aggression has for the individual rather than the presence or frequency of the reported incidents (Dick, 2000). This finding adds further complication for healthcare providers, their employers and researchers.

In summary, the Ehlers and Clark (2000) cognitive model of PTSD is one of the most widely used in clinical practice, particularly lending itself to Cognitive Behavioural Therapy, one of the most effective evidence-based treatments for PTSD (Roth & Fonagy, 1996) and recommended as a first line treatment in the Nice Guidelines (2005). The model is held up by experts in the field (eg. Brewin & Holmes, 2003) as one of the most credible models both clinically and theoretically. Further validation of the model with healthcare workers will build on the evidence already found for this model but with specific reference to this population. In addition investigation of the relationships between the factors in the model will increase our understanding of how PTSD develops and is maintained. It is evident from the current literature review that there is a real need for the proposed research and this need has been reinforced by discussion with leading researchers such as Anke Ehlers, Emma Dunmore and Thomas Ehring (part of Ehlers-Clark research group). There are currently no published studies that have addressed the principal objectives of the proposed study, suggesting that it is not duplicating research already done.

Aims Study 1

Only one other study has considered the mediation relationship within the model, but this was an analogue study with student volunteers (Halligan et al., 2003). The only study that has considered more than two factors in the model, with healthcare workers, did so using a cross-sectional design and did not look specifically at workplace violence and aggression (Laposa & Alden, 2003). Therefore the primary aim of this study was to consider the proposed mechanisms within the Ehlers and Clark (2000) model, using a longitudinal design with healthcare workers, following an incident of violence and aggression. The secondary aim was to further validate the Ehlers and Clark (2000) model of persistent PTSD.

Study Outline

The following hypotheses were to be used to fulfill the aims of this study:

1. Cognitive and behavioural strategies prevent change in the nature of the trauma memory and negative appraisals of the trauma and its sequelae over time.
2. Negative appraisals of the trauma and its sequelae mediate the relationship between peri-traumatic cognitive processing and PTSD symptoms, and the sense of current threat.
3. The nature of the trauma memory mediates the relationship between peri-traumatic cognitive processing and PTSD symptoms, and the sense of current threat.

Notice to Reader

Despite collecting data for 10 months and carrying out a number of strategies to increase recruitment, including setting up an additional study site, the numbers of participants was insufficient to carry out a meaningful analysis. To answer questions posed by the minimal response rate and findings from Study 1 a qualitative study was carried out (Study 2). The structure of this thesis will proceed with the method, minimal results and discussion for Study 1 and will then go onto the method, results and discussion for Study 2, ending with a combined conclusion from both studies.

Method Study 1

Design

A longitudinal, repeated-measures design was used to investigate the proposed mediation relationships and to investigate whether certain variables in the model change over time.

The reasons for choosing a prospective, longitudinal design rather than cross-sectional or repeated cross-sectional designs were twofold. Firstly, the Ehlers and Clark (2000) model of PTSD provides an explanation of *persistent* PTSD so the design allowed the evaluation of symptoms over time, with the same subjects, minimising the likelihood of recollection bias (Ruspini, 2000). Secondly, a longitudinal design enabled the assessment of whether the mechanisms, predicted in the model, relate to one another in the temporal order hypothesised by Ehlers and Clark (2000). There was no control group for this study because it was researching proposed mechanisms within a theoretical model not comparing groups or manipulating variables.

Mediators can be described as underlying change systems, providing information about which mechanisms are essential for influencing outcome and how a given effect occurs. Mediators explain the relationship between an independent variable (IV) and the dependent variable (DV) (Baron & Kenny, 1986). Ehlers and Clark (2000) specify a number of mechanisms involving mediation between two variables and the study set out to investigate these.

Measures

Each of the measures chosen, barring the HADS and Background Characteristics/Assault Characteristics/ Formal and Informal Support were used to measure the aspect of the Ehlers and Clark (2000) model that were to be tested in the following hypotheses:

1. Cognitive and behavioural strategies prevent change in the nature of the trauma memory and negative appraisals of the trauma and its sequelae over time.
2. Negative appraisals of the trauma and its sequelae mediate the relationship between peri-traumatic cognitive processing and PTSD symptoms, and the sense of current threat.
3. The nature of the trauma memory mediates the relationship between peri-traumatic cognitive processing and PTSD symptoms, and the sense of current threat.

Independent Measures

Cognitive Processing during the Assault (peri-traumatic cognitive processing):

The following four measures relate to cognitive processing during the assault. The concepts they were designed to evaluate were developed in a series of studies and were drawn out of extensive

clinical experience, working with individuals who presented with persistent PTSD symptoms (Dunmore et al., 1999; 2001; Halligan et al., 2002; Murray et al., 2002). These measures do not have norms but have been used extensively in published research and all have been found to have good internal consistency. All four have Likert-like scales with options of 0 (not at all/never) to 4 (very strongly). The measures are as follows:

Data-Drive processing Scale This scale (Ehlers, 1998) measured the extent to which participants primarily engaged in surface level, perceptual processing during the assault (Halligan et al., 2003); (á = 0.88).

The Lack of Self-Referent processing Scale This scale measured the extent to which participants processed the assault as happening to themselves and were able to incorporate the experience with other autobiographical information; (á = 0.88) (Halligan et al., 2003).

State Dissociation Questionnaire (SDQ) The SDQ (Murray et al., 2002) measured the extent to which the participants experienced dissociative experiences during the incident such as derealisation and detachment; (á = 0.75) (Halligan et al., 2003).

Modified Thoughts and Feeling during the Trauma This scale measured the extent to which the participants had mentally given up efforts to retain their sense of being human with a will of their own, or perceived that they had lost their autonomy during the assault; (á = 0.93) (Dunmore et al., 1999; 2001).

Negative Appraisals of the trauma and its sequelae:

Post Traumatic Cognitions Inventory (PTCI) measures the participants' appraisals of the trauma and its sequelae (Foa, Ehlers, Clark, Tolin & Orsillo, 1999). This scale has been used in studies investigating this aspect of the Ehlers and Clark (2000) model (Foa, Ehlers, Clark, Tolin & Orsillo, 1999). PTSD symptoms have been found to be associated with the cognition scores assessed by the PTCI and it has good internal consistency (á = 0.97) (Foa et al., 1999).

The PTCI consists of three sub-scales with options 1 (totally disagree) to 7 (agree totally): negative cognitions about the self; negative cognitions about the world; and self blame for the trauma. The sub-scales total scores are obtained by gaining the mean score of the items within each sub-scale, and a total score is obtained by summing all the raw sub-scale totals.

Nature of the trauma memory:

The *Deficits in intentional recall,* a sub-scale of the *Unpleasant Memories Questionnaire* was used because the remaining aspects of the scale overlapped with the PTSD symptoms questions on the PDS. Similar studies have also only used this sub-scale when investigating this aspect of the Ehlers and Clark (2000) model (Halligan et al., 2003). The 5 item sub-scale offers good internal consistency (á = 0.88) (Halligan et al., 2003).

This questionnaire asks participants to rate items on how well they describe their trauma memories, with options of 0 (not at all) to 4 (very strongly).

Cognitive and behavioural strategies:

The *Maladaptive Control Strategies questionnaire* (Dunmore et al., 1999; 2001) measures the extent to which participants engage or try to engage in avoidance behaviours following traumatic incident. It has been used in similar research to measure maladaptive behavioural aspects of the Ehlers and Clark (2000) model (Dunmore et al., 1999; 2001). The Maladaptive Control Strategies questionnaire has been found to have good internal consistency (á = 0.92) (Dunmore et al., 1999; 2001). The behaviours the questionnaires measures include: avoidance of thoughts and feelings about the incident; of people; talking about the incident; and of situations that remind them of the incident. It has options of 0 (not at all/never) to 3 (always).

The *Response to Intrusions Questionnaire (RIQ)* (Dunmore et al., 1999; 2001) has also been used in similar research to asses the maladaptive cognitive responses of participants (Dunmore et al., 1999; 2001). The RIQ has been found to have good internal consistency (á = 0.75) (Dunmore et al., 1999; 2001). The RIQ (Dunmore et al., 1999; 2001) measures the responses of participants to memories of the assault and how frequent and how distressing they are. The responses included negative and positive interpretation of the intrusive memory, rumination, thought suppression and dissociation, with options of 0 (not at all/never) to 3 (always).

PTSD symptoms and sense of current threat:

The symptom sub-scale of the *Posttraumatic Diagnostic Scale (PDS)* (Foa, 1995) was the primary dependent variable measure. The symptom cluster sub-scale of the PDS was used without the scales assessing criterion A, E and F of DSM-IV criteria for PTSD (American Psychiatric Association, 1994) because the focus was on PTSD symptoms rather than additional information on social and occupational functioning and to minimise the number of items the participants had to answer. The symptom sub-scale of the PDS has been used to assess PTSD symptoms in similar studies. The

internal consistency of the PDS has been found to be high (á = 0.92) (Foa, et al., 1995). The test-retest reliability of the overall scale has been shown to be good (Foa et. al, 1997). The PDS has good face validity with the items closely corresponding to the DSM-IV criteria for PTSD (American Psychiatric Association, 1994).

Participants are asked to rate how much a symptom has bothered them in the last month, with options ranging from 0 (not at all/once only) to 3 (5+ times a week). The scale produces a symptom severity score that ranges from 0 to 51 with scores of 1 to 10 being mild through to scores of 36 to 51 being severe (Devilly, 2004).

Additional Measures

Background Characteristics/Assault Characteristics/ Formal and Informal Support:

These scales were adapted from a semi-structured interview used in previously published studies (eg. Dunmore et al., 1999). Background information like gender, education and ethnicity were collected to provide details of the sample. Details of the assault and subjective ratings of the injury severity were collected along with details of the use of formal help from psychological services and informal support from family, friends and colleagues. This information was collected to provide details of the assault and support networks that could have been controlled for when assessing the hypothesised relationships detailed above.

Dependent measure:

The *Hospital Anxiety and Depression Scale (HADS)* (Zigmond & Snaith, 1983) is a widely used measure that detects states of anxiety and depression symptoms. The HADS has been shown in a recent literature review to have good internal consistency on both the anxiety (HADS-A mean alpha 0.83) and depression sub-scales (HADS-D mean alpha 0.82) (Bjelland, Dahl, Haug & Neckelmann, 2002). The depression and anxiety sub-scales of the HADS were used as additional dependent variables to provide further indices of psychopathology owing to their co-morbidity with PTSD (Nice Guidelines, 2005). Many other studies investigating PTSD have measured depression and anxiety (eg. Dunmore et al., 1999 & 2001; Halligan et al., 2003; Michael et al., 2005).

The HADS (Zigmond & Snaith, 1983) asks participants to rate how they have felt in the last week in relation to statements indicating anxiety or depression, with options ranging from 0 (not at all) to 3 (most of the time). Scores of 0-7 in each subscale are considered normal, with 8-10 borderline and 11 or over indicating clinical 'case-ness'.

Table 3. Measures: Content, Internal Consistency and Timing

INDEPENDENT VARIABLES	Measure	Items	Time	Reference
Data-driven processing	Data-driven Processing Scale	8	1	Halligan, Michael, Clark & Ehlers (2003)
Self-referent processing	The Lack of Self-referent Processing Scale	8	1	Halligan et al. (2003)
Peri-traumatic dissociation	State Dissociation Questionnaire	9	1	Murray, Ehlers & Mayou (2002)
Mental defeat	Modified Thoughts and feelings During the Trauma	11	1	Dunmore, Clark & Ehlers (1999, 2001)
Cognitive processing during the assault				
Disorganised memory & intrusions	Unpleasant Memories Questionnaire – Deficits in	5	1,2,3	Halligan et al. (2003)
Nature of the trauma memory	intentional recall sub-scale			
Negative thoughts about self, world, self-blame	Post Traumatic Cognitions Inventory	33	1,2,3	Foa, Ehlers, Clark, Tolin & Orsillo (1999)
Appraisal of the trauma and its sequelae				
Behaviour – avoidance/safety seeking	Maladaptive Control Strategies Questionnaire	26	1,2	Dunmore et al. (1999, 2001)
Thoughts – rumination and avoidance	Response to Intrusions Questionnaire	18	1,2	Dunmore et al. (1999, 2001)
Dysfunctional control strategies				
Demographics, previous history of abuse/trauma/psychiatric disorders	Background Factors Questionnaire	11		Adapted from semi-structured interviews e.g. Dunmore et al., (1999)
Use of formal and informal support	Psychological Services and Informal Support	4	1	
Subjective assault characteristics	Incident Severity Questionnaire	14		
PTSD Symptom severity	Posttraumatic Diagnostic Scale (PDS)	17	1,2,3	Foa, (1995)
Depression, anxiety	Hospital Anxiety and Depression Scale (HADS) HADS - A HADS - D	14	1,2,3	Zigmond & Snaith (1983)

1 = within 10 days of the incident; 2 = 1 month post incident; 3 = 3 months post incident. See Appendices for copies of the measures.

Timing .

Three data collections took place over three months for the purposes of this study and a further 6 month data collection occurred for publication purposes. Data were collected within 10 days of the incident and at 1 and 3 months after the incident. For each participant, it was important to collect data as soon after the incident occurring as possible because it has been found that memories of such incidents can change over time (eg. Ruspini, 2000; Loftus & Ketcham, 1991). Data were collected at 1 month after the trauma for 2 reasons: to provide a middle time point to allow analysis of the mediation relationship; and because the minimum amount of time for a diagnosis of PTSD symptoms is 1 month post-trauma. The 3 month data collection was necessary to assess how persistent the symptoms were as the model is of persistent PTSD symptoms, and to allow the mediation relationship to be explored. Table 3. indicates the measures used to assess the variables in the hypotheses, their reliability, and provides the time points for data collection.

Sample

A sample size of 128 was calculated using GPower software as being necessary to detect a medium effect size with moderate power. The attrition rate at the end of each stage of the data collection was estimated on rates calculated from a previous similar research study (Salter, 2003) (T1=27.3%, T2=27.3%). Therefore, an initial sample size of approximately 233 participants would ideally be recruited into the study. Information from the research sites regarding the frequency of violent or aggressive incidents suggested that approximately 360 incidents occurred per year and therefore an initial sample size of 233 would be achievable within the 11 month research time period.

The sample was taken from 1400 workers from an Ambulance Service in the North of England (Site 1). They were either paramedics, technicians (A&E), patient transport service (PTS) or primary care workers (Primary Care Service). The A&E and PTS staff all worked out of the ambulance stations whereas the Primary Care Service staff were call handlers who took calls from patients out of hours. A senior dispatcher then passed these calls on to various Primary Care Centres throughout the region for clinical assessment. The initial sampling method used was consecutive case sampling, namely consecutive victims of violence and aggression were invited to participate in the study as their reports were received by the Controls Assurance Managers (CAMs).

Inclusion criteria

For inclusion in the study the individual must have met all of the following criteria:

1. The incident had occurred within the last 10 days.
2. The member of staff was involved in or witnessed an act of physical violence, threat of violence or other verbal/written aggression at work.

3. The member of staff was able to read English.
4. The member of staff was an employee of the ambulance service.
5. The member of staff was not suffering from an injury or incident-related problem that would prevent them from participating.
6. Each member of staff could be asked to take part in the study up to two times.

It was hoped that with the large number of potential participants, and minimal exclusion criteria, the resulting sample would be representative of the organisation as a whole. In addition, it was hoped that the use of existing reporting procedures for recruitment would provide a representative sample and would facilitate appropriate and efficient access to relevant staff.

Recruitment Site 1: Development and Procedure

Steps taken prior to data collection

The method of data collection described below was developed with, and approved by, the staff representatives from Site 1. It was informed by their existing reporting procedures to ensure that the research had minimal impact on the day-to-day management of incidents.

The CAMs involved in the recruitment of participants received information to explain the research. A training session was conducted by the lead researcher on how to recruit the participants and a written guide provided for their conversations with staff.

A presentation to staff representatives highlighting the aims of the study and how the research would benefit the ambulance service was subsequently carried out. Detailed handouts were provided and staff were encouraged to go back to their stations and tell their colleagues about the study. In addition, a piece was written about the study and placed on the internal TV and in the monthly Newsletter. A computerised information prompt was placed on the incident reporting system to inform staff that the research was taking place and to let staff know that they would be approached to take part.

Recruitment procedure

Staff who witnessed or experienced a violent or aggressive incident at work followed company protocol and logged the event on their computer system as close to the incident occurring as possible. The computerised information prompt appeared when this particular type of incident was logged. The computer system routinely alerted the managers to incidents of violence and aggression, whether witnessed or experienced, and identified who had experienced or witnessed the incident.

A potential participant was contacted by the CAMs by telephone within 48 hours of the incident being logged. Before being invited to take part, they were given a brief description of the research and what would be involved. If the potential participant expressed an interest in taking

part, verbal consent was obtained to send them the first questionnaire pack. The CAMs also checked whether the staff member had previously taken part in the research and asked them if the second incident was more troubling than the first and if so, whether they would like to re-start the questionnaire packs with reference to this second incident. As per their company protocol, the CAMs also checked whether the member of staff required support relating to the incident.

If staff were willing to take part in the study, the CAMs sent them the first questionnaire pack. An information sheet was provided in the questionnaire pack along with a written consent form. The completed questionnaire pack and consent form were returned in the stamped addressed envelope provided, to the researcher. Providing consent was not withdrawn, the follow up questionnaires were sent by mail at one and three months after the incident.

The member of staff's name, the incident reference number, preferred contact address, number of times the member of staff had been asked to take part and whether consent was gained to re-start, were all recorded by the CAMs on a recording sheet that they sent to the researcher on completion of the study. Ensuring staff were not asked more than twice to take part in the study.

Consent and confidentiality

Verbal consent was gained by the CAMs to send Time 1 questionnaires to participants. Written consent was then gained when participants completed the consent form in the Time 1 packs and returned them to the researcher.

Only the researcher and their supervisor knew who took part in the study, and their preferred contact address. The CAMs only knew who consented to have a Time 1 pack sent to them. The preferred contact details could have either been the participant's home or work address and the researcher held this information in a locked filing cabinet. Participants were allocated a number that was used to identify the questionnaires. All data in SPSS was coded so those individuals were not identifiable from the data set. Data was stored on a personal computer in a password-protected file.

Measures taken to increase recruitment

Data collection commenced on the 9th June, 2005. By the end of July the total response rate was 1. This low response rate led to numerous measures being taken to increase staff access to the study and to improve the representativeness of the sample (see Figure 3.). One of the major changes to recruitment was that Time 1 questionnaire packs were left at the Ambulance stations. This change in procedure meant a significant cost by reducing control over the recruitment process. These costs meant that it was not possible to gain an accurate response rate because the number of questionnaires that were taken could not be compared to the number returned. The level of bias in the sample could not be known because the number of people who did not take part and their details

were not known. This meant that it was not possible to estimate whether those who did take part were representative of the population of ambulance workers as a whole. This change in recruitment also meant that, despite the information posters and the Participant Information sheet detailing the inclusion criteria, it was not possible to ensure that participants had witnessed or experienced an incident of violence and aggression. Given the structure of the organisation and the need to maximise the sample size, it was considered an appropriate price to pay.

Between August and mid – November, 2005 there was a increase in recruitment from the ambulance service with a total of 14 additional participants, resulting in 15 in total. However, this increase was not felt to be sufficiently large so additional measures were devised from suggestions made by staff on the station visits and through consultation with thesis supervisors (see Figure 3.). Despite these measures the response rate remained low and the representativeness of the sample was poor. It was therefore decided to recruit from a second site (Site 2).

Response Rate

The response rate is summarised in Figure 2. The response rate at Time 1 for Site 1 and 2 combined was 16.5%. The attrition rate at Time 2 for both sites combined was 33.3% and at Time 3 was 59.81%. The discrepancy at site 1 between the number of reported incidents and the number of participants recruited will be discussed. [A]

Recruitment Site 2:

The additional site was a Teaching Hospital in the North of England (Site 2). The sample was drawn from wards/departments with the highest incidents of violence and aggression: Medical Admissions Unit; Maternity; A&E; and Security. The recruitment process and data collected was shared with a fellow clinical psychologist in training. Following an incident of violence or aggression staff followed normal procedures and filled in an Incident Reporting Form and sent them to the Clinical Risk Manager within 24 hrs of an incident occurring. The Clinical Risk Manager and Clinical Risk Administrator sent out Time 1 questionnaire packs to the staff member on receipt of their Incident Form. The recruitment procedure was agreed with the Clinical Risk Manager for the hospital Trust. All other aspects of the recruitment protocol were the same as Site 1 detailed above.

Statistical Analysis

Pearson's correlations were to be used to assess whether high use of cognitive (avoidance of thoughts/reminders and rumination) and behavioural strategies correlated negatively with change over time (i.e. strategies prevent change) in the nature of the trauma memory and the appraisals of the trauma and its sequelae (Hypothesis 1). For example, the difference between the nature of the trauma memory at T_1 and T_3 were to be correlated with the use of strategies at T_2.

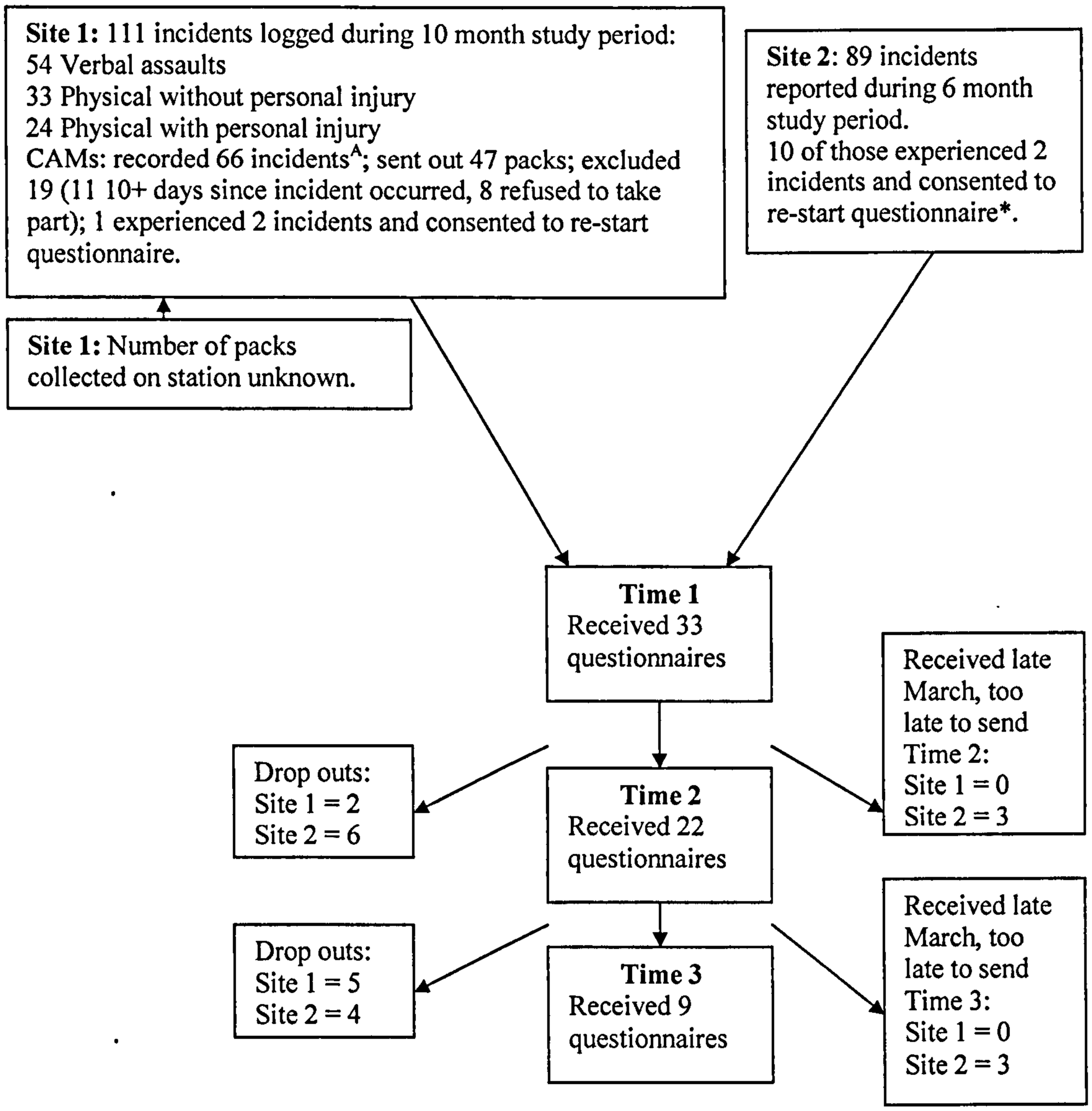


Figure 2. Summary of the Response Rates from Site 1 and 2

Multiple regression was to be used to assess whether the nature of the trauma memory and the appraisals of the trauma and its sequelae mediate the relationship between peritruamatic cognitive processing (data-driven processing, lack of self-referent processing, dissociation and mental defeat) and PTSD symptoms (Hypotheses 2 and 3). However a sample size at each of the 3 time points of 9 did not reach even minimal standards for statistical analyses (Comrey & Lee, 1992) and so none of the above tests were carried out. Instead SPSS was used to provide descriptive statistics for the sample.

June Response Rate
1 (Site 1)

1. July, 2005: Site 1
Progress review meeting held with CAMs. re: improvements to increase response rate and quality check the recruitment procedure.

July
0 (Site 1)

2. August, 2005: Site 1
Visit to Ambulance station to discuss with staff reasons for poor response rate/possible improvements.
Presentation/discussion Ambulance staff reps reasons/solutions for poor response rate.
Newsletter & advert on internal TV raise study profile.
Reminder sheet added to Time 1 packs highlighting key inclusion criteria.

August
2 (Site 1)

3. September, 2005: Site 1 & 2
Fliers sent all 1400 Site 1 staff.
Site 2 approached and recruitment procedure agreed with Clinical Risk manager.

September
3 (Site 1.)

4. September – October, 2005: Site 1 & 2
18 Site 1 Ambulance stations visited by researcher to advertise research.
Time 1 packs left in all Site 1 Ambulance stations enabling staff to participate without officially reporting an incident.
Clinical Risk mgr. Site 2, briefed relevant mgr. and modern matrons on research and benefits for Hospital Trust.

October
5 (Site 1)

5. October, 2005: Site 1 & 2
Presentation to managers of largest Ambulance stations, Site 1 to raise study profile.
Data collection commenced at Site 2.
Researchers briefed Site 2 staff from wards with highest risk of violence & aggression on the research and distributed fliers.

November
2 (Site 1)
2 (Site 2.)

6. November - December 2005: Site 1 & 2
Letter & information sheet sent to all Site 1 Ambulance station & operations managers to draw staff attention to the research.
Visit to Site 1 Ambulance Control centres to draw the attention of staff they talk to, to the research.
Fliers sent to all Site 1 Ambulance staff detailing progress of research.
Researchers briefed Site 2 staff from wards with highest risk of violence & aggression on the research and distributed fliers.
Fliers placed in high visibility areas around Site 2 eg. Back of toilet doors.

December
1 (Site 1)
2 (Site 2)

January – April 2006
1 (Site 1)
14 (Site 2)

Figure 3. Measures taken to increase recruitment and resulting response rate.

Results Study 1

In this section the background characteristics of the participants, the assault characteristics and the level of post trauma support will be summarised. Descriptive statistics will be displayed for each measure at each of the three time points. The low level of reports of PTSD symptoms will be illustrated.

Background Characteristics

The background characteristics of the sample are summarised in Table.4. There were similar numbers of males and females in the sample with a mean age of 37.61 years (range 23 – 59 years) and all of the participants were Caucasian. The majority (90.3%) had had some level of education, with GCSE/O'level being the most frequently reported qualification (41.9%) and then degree level was the second most reported (29%). The most frequently reported household income was £20 - £29, 999 (38.7%), with the second most frequent being £30 - £39,999. Over two thirds reported not being abused as a child or having experienced other childhood trauma. All except one participant reported no history of psychiatric disorders in their family. Just over half reported experiencing trauma in their adult life other than the current incident, but the majority (87.5%) had not had any psychological treatment in the past.

Assault Characteristics

The assault characteristics for this sample are summarised in Table 5. Two thirds of the assaults were verbal, with the remainder being either verbal and physical, or purely physical. No sexual assaults were reported. Just under half of the assaults included a threat of harm but few involved a weapon and none involved contact with a weapon. The mean ratings out of 100 for feeling threatened with harm and feeling threatened with their life during the assault were low (8.7 & 16.1 respectively), with a large standard deviation relative to the mean (s.d. = 24.1 & 21.9 respectively). The majority of the assaults resulted in no injuries (74.2%) or minor cuts and bruises (19.4%). The majority (80.7%) of assaults involved only one assailant. Just under a quarter of the assailants were arrested but very few victims pursued court proceedings (3.2%) or compensation claims (3.2%).

Formal and Informal Support

The extent of formal and informal support for this sample is summarised in Table 6. The majority of participants did not receive formal, psychological support from a trained health professional following the assault. However, exactly half reported informal support from their family, friends and or colleagues. All of the variables had a small number of missing data points.

Table 4. Background Characteristics

Category	**Total Sample N = 33**
Gender (1 missing)	*n (%)*
Male	14 (43.8)
Female	18 (56.3)
	mean (range)
Age (5 missing)	37.61 (23 – 59)
Yearly Household Income (2 missing)	*n (%)*
Less than £10,000	0 (0)
£10,000 - £19,999	3 (9.7)
£20,000 - £29,999	12 (38.7)
£30,000 - £39,999	6 (19.4)
£40,000 - £49,999	5 (16.1)
£50,000 plus	5 (16.1)
Ethnicity (1 missing)	
Caucasian	32 (100)
Non-Caucasian	0 (0)
Education (2 missing)	
none	3 (9.7)
GCSE/O'level	13 (41.9)
A'level	3 (9.7)
Degree	9 (29.0)
Post Grad	3 (9.7)
Received previous psychological treatment (1 missing)	4 (12.5)
Abused as child (1 missing)	3 (9.4)
Experienced childhood trauma (not abuse) (1 missing)	6 (18.8)
Experienced adult trauma (not incident) (1 missing)	18 (56.3)
Familial psychiatric history (1 missing)	1 (3.1)

Descriptives

All descriptive statistics are summarised in Table 7.

Independent Variables

Cognitive processing during the assault The four scales that measure cognitive processing during the assault have no norms with which to compare this sample's means. All four mean scores were relatively low compared to the maximum possible score for each scale and all had quite large standard deviations, relative to the means indicating a relatively wide range in scores. The lowest scores were for lack of self-referent processing, dissociation and mental defeat during the assault, with comparatively higher levels reported for data-driven processing.

Nature of the trauma memory The mean scores for the unpleasant memories scale across all three time points are low. The standard deviations are relatively high in relation to the means.

Table 5. Assault Characteristics

Characteristics	**Total Sample N = 33**
Time assault occurred (6 missing)	*n (%)*
Morning	3 (11.1)
Afternoon	12 (44.4)
Evening	6 (22.2)
Night	6 (22.2)
Assault duration (2 missing)	
5 mins or less	16 (51.6)
6 – 10 mins	5 (16.1)
11 – 30 mins	6 (19.4)
31 – 60 mins	3 (9.7)
Over 1 hour	1 (3.2)
Incident involvement (2 missing)	
Witnessed	7 (22.6)
Experienced	24 (77.4)
Type of assault (5 missing)	
Verbal	18 (64.3)
Physical	5 (17.9)
Verbal & physical	5 (17.9)
Sexual	0 (0)
No. of assailants (2 missing)	
One	25 (80.7)
Two or more	6 (19.4)
Weapon used (2 missing)	5 (16.1)
Weapon in contact with victim (2 missing)	0 (0)
Victim threatened with harm (2 missing)	14 (45.2)
Extent of injury (2 missing)	
No injuries	23 (74.2)
Minor cuts/bruises	6 (19.4)
Head injury	1 (3.2)
Other (not specified)	1 (3.2)
	mean (s.d.)
Perceived threat to life (2 missing)	8.66 (24.1)
Perceived threat of serious injury (3 missing)	16.08 (21.9)
	n (%)
Assailants arrested (2 missing)	7 (22.6)
Court action taken (2 missing)	1 (3.2)
Claimed compensation (2 missing)	1 (3.2)

Table 6. Formal and informal support

Characteristics	**Total Sample N = 33**
	n (%)
Received formal psychological support (1 missing)	2 (6.25)
Received informal support from family, friends, colleagues (1 missing)	16 (50.00)

The highest mean score is at time 1 suggesting recall of the assault was perceived by the participants to be at its worst within 10 days of the incident.

Appraisal of the trauma and its sequelae The total score for the PTCI at all 3 time points fell below the scale's cut off for the scale (133 +/- 44) indicating an overall lack of cognitions associated with PTSD. However, the negative cognitions about the world sub-scale at Time 3 falls within the cut offs for the scale (5 +/-1.3) and the self blame for the trauma sub-scale mean scores across all 3 time points fall within the cut offs for that scale (3.2 +/-1.7) indicating the presence of cognitions that have been found to be associated with PTSD (Foa et al., 1999).

Dysfunctional control strategies The means for the maladaptive control strategies and response to intrusions scales were low across both time points, and the standard deviations were large relative to the means.

Dependent Variables

PTSD Symptom Severity The mean scores for the total scale, at all 3 time points for PTSD symptoms were in the mild range and the sub-scale scores did not differ markedly from this pattern, indicating a predominant lack of PTSD symptoms in this sample (Foa et. al, 1997). Figure 4 illustrates this pattern, as well as showing the substantial fall in sample size at each time point.

Depression and Anxiety The means for the depression and anxiety sub-scales were in the 'normal' range for all 3 time points. Of the two sub-scales the anxiety mean scores were higher than the depression scores but still were within the 'normal' range.

Figure 4. Summary of PDS scores at time 1 to 3

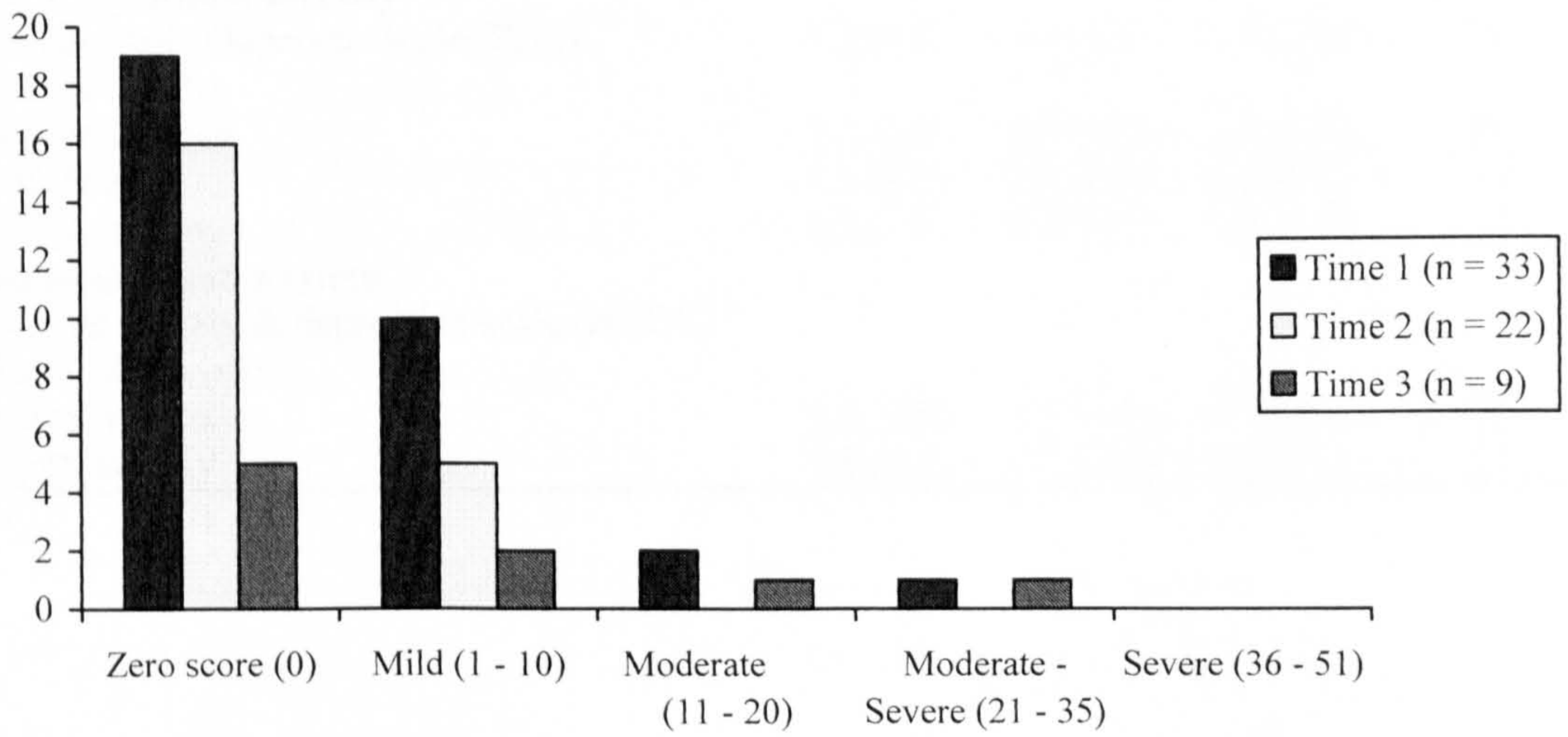


Table 7. Time 1 to 3 Means and standard deviations for cognitive and symptoms Variables

Measure	T1 N = 33	T2 N = 22	T3 N = 9	Max. Scale Score
	Mean (Standard Deviation)			
INDEPENDENT VARIABLES				
Cognitive processing during the assault				
Data-driven processing style	7.6 (6.1)			32
Lack of self-referent processing	2.9 (5.0)			32
State dissociation	3.9 (4.9)			36
Modified thoughts & feelings during the trauma (mental defeat)	4.4 (6.5)			44
Nature of the trauma memory				
Unpleasant memories	2.7 (4.3)	1.8(2.8)	2.1(3.6)	20
Appraisal of the trauma and its sequelae				
Post-traumatic cognitions inventory (PTCI)	66.0 (32.3)	53.9 (20.8)	71.7 (30.6)	231
PTCI sub-scales				
PTCI Self	1.5 (0.9)	1.2 (0.6)	1.6 (0.9)	7
PTCI World	3.6 (1.7)	2.7 (1.4)	3.8 (1.7)	7
PTCI Blame	2.1 (1.4)	1.8 (1.2)	2.1 (1.1)	7
Dysfunctional control strategies				
Maladaptive control strategies	8.3 (8.8)	5.1 (6.7)		78
Response to intrusions	7.1 (8.6)	3.3 (5.4)		54
OUTCOME VARIABLES				
PTSD Symptom severity				
Posttraumatic diagnostic scale (PDS)	3.5 (6.8)	1.0 (2.4)	5.8 (7.8)	51
PDS sub-scales				
PDS Avoidance	1.1 (2.8)	0.3 (0.9)	1.3 (1.9)	21
PDS Arousal	1.6 (2.9)	0.6 (1.4)	3.6 (4.6)	15
PDS Intrusions	0.8 (1.6)	0.3 (0.7)	0.9 (1.5)	15
Depression and anxiety				
Hospital anxiety & depression scale (HADS)				
HADS sub-scales				
HADS depression	1.0 (2.8)	1.5 (2.2)	3.1 (3.9)	21
HADS anxiety	2.8 (3.8)	3.7 (2.6)	5.8 (3.9)	21

Discussion Study 1

Introduction to chapter

This section will begin with a brief discussion of the findings from Study 1 in relation to the literature base. The limitations for Study 1 will be outlined and recommendations for improvements will be made. The questions raised by Study 1 will then be discussed. The planning for the resultant Study 2 that sought to address these questions will be outlined and relevant literature discussed.

Summary of findings

Background Characteristics

The overall sample consisted of relatively even proportions of males and females, with more men in the ambulance service and more women from the hospital site. The numbers were not sufficiently large to permit a valid comparison of PTSD symptoms. Similar levels of PTSD symptoms were found in a study of predominantly male ambulance workers (Clohessy & Ehlers, 1999) and predominantly female Emergency Department (ED) personnel (Laposa & Alden, 2003).

Ehlers and Clark (2000) identified certain background factors that could be risk factors for developing PTSD, but were neither necessary nor sufficient for its development. Included in these factors were: intelligence; previous traumatic experiences; levels of support; and trauma characteristics. Each of these will be addressed in turn in relation to the current sample. The healthcare staff that made up this sample, showed reasonably high levels of education, which could be considered a proxy variable for intelligence. This might indicate a potentially protective factor and account for the relatively low symptoms in this sample. However, Laposa and Alden (2003) found high rates of PTSD (20%) in their professional population of ED personnel and questioned the level of protection that intelligence can afford. A potential risk of developing PTSD for the current sample was that over half had experienced other traumas in their adult life. This may have reflected the high rates of violence and aggression, along with other traumatic experiences, that health professionals are exposed to as part of their work (Aldrich, 2006; Nanuwa et al., 2004). The levels of accessing professional help following incidents of violence and aggression were very low, and if help was sought it tended to be from colleagues, friends and family. This minimal use of formal support services and preference for informal support networks has regularly been found amongst ambulance workers (Jonsson & Segesten, 2003; Alexander & Klein, 2001) and other emergency personnel (Dick, 2000).

With respect to trauma characteristics, verbal aggression was the most commonly reported incident, then physical and/or verbal aggression. There were no sexual assaults reported. This finding is not surprising as verbal aggression has been shown to be more prevalent than physical assaults in other healthcare populations (e.g. London Ambulance Service, Nanuwa et al., 2004).

However, studies with similar populations have found that verbal aggression can be as distressing as some physical assaults (e.g. Walsh & Clarke, 2003). The subjective severity ratings of the incidents of violence and aggression were predominantly low and the majority of incidents involved one assailant. This subjective perception may account for the subsequent low rates of PTSD symptoms for this sample of healthcare workers. Dick (2000) found that it was the subjective meaning of incidents of violence and aggression, in the context of the wider organisational culture, which had an effect on the psychological distress of police officers, not the frequency or prevalence of the aggressive incidents themselves. Finally, close to a quarter of the assailants were arrested however, the number of cases brought to court or the compensation claims sought, was very low. This finding may reflect the perceived low levels of severity of the incidents. It may suggest that few healthcare professionals seek to prosecute, perhaps because there was little hope of a prosecution or simply reflects an aspect of British culture that is not, as yet, in favour of compensation claims.

Cognitive and Behavioural Factors

The different cognitive and behavioural aspects of the Ehlers and Clark (2000) model that were measured included: peri-traumatic cognitive processing; nature of the trauma memory (deficits in intentional recall); negative appraisals of the trauma and its sequelae; and maladaptive behavioural and cognitive strategies. There are no norms for these scales so it is not possible to compare their means. However, given that over three-quarters of the sample rated above 0 for data-driven processing and dissociation, this may suggest that PTSD symptoms were likely. Because there were in fact low symptom scores one might tentatively suggest that data-driven processing and dissociation were less discriminatory than the other measures of peri-traumatic processing, where over half the scores were 0. Without norms it is not possible to state whether the scores for the nature of the deficits in intentional recall of the trauma memory are high or low. The sub-scales from the PTCI measuring negative cognitions about the world and self blame, had scores that fell within the cut-offs. This reflects cognitions associated with seeing the world as a dangerous place and a sense of culpability or guilt associated with the incident. The cut-off scores on the PTCI represent scores on the PTCI that have been found in populations with PTSD symptoms (Foa et al., 1999). Dick (2000) found that following incidents of violence and aggression police officers described beliefs about the world as dangerous and unpredictable.

In summary, the general pattern was of low scores for the factors in the Ehlers and Clark (2000) model and of PTSD symptoms, which further decreased over the three time points. If the Ehlers and Clark (2000) model is valid for this population, the lack of persistent symptoms of PTSD is consistent with the low use of maintaining, maladaptive behavioural and cognitive strategies. There was a marked lack of PTSD symptoms at each of the 3 time points, with only 1 participant

reporting Moderate to Severe symptoms at time 3, and no Severe symptoms being reported. The percentage of participants scoring Moderate and Moderate to Severe PTSD symptoms (ie. 11 – 51) at time 1 was 9%, at time 2 was 0%, and time 3 was 22%, however the latter figure equated to 1 participant from a very small remaining sample (N = 9). These figures were significantly lower than the 22% of ED personnel (N = 51) (Laposa & Alden, 2003) and 25% of ambulance workers (N = 56) (Clohessy & Ehlers, 1999) who scored between Moderate and Severe for PTSD symptoms.

The lack of PTSD symptoms, particularly in the Moderate and Severe ranges, combined with the small sample size meant that further analysis was not possible (Brewin, Rose, Andrews, Green, Tata, McEvedy, Turner & Foa, 2002). The only other study found in the literature search that showed low PTSD symptoms for healthcare workers was a study into Australian student paramedics, who had a 5% PTSD rate (Lowery & Stokes, 2005). This may have been because they had had fewer years of exposure to traumatic incidents (e.g. Jonsson & Segesten, 2003). The sample for their study, like the current study, was small (N = 42) and may not have been representative of the population as a whole. Small sample sizes do not necessarily account for low PTSD symptoms as the samples for the studies of ambulance workers and ED personnel were also comparatively small (Clohessy & Ehlers, 1999;Laposa & Alden, 2003). The comparatively low rate of PTSD symptoms amongst the current sample of healthcare workers could have been due to the incidents not being severe enough. While incident severity has been shown to account for some variance in PTSD symptoms, other factors, for example, cognitive factors, were shown to account for more, over and above perceived trauma severity (Dunmore et al., 2003). Canadian paramedics reported that violent and aggressive incidents were less distressing and for Canadian and British paramedics the death of a child, or someone known to the worker were reported as the most distressing (Clohessy & Ehlers, 1999; Regehr et al., 2002). However, studies into the general public who had survived physical assaults found that such incidents can cause PTSD (e.g. Halligan et al., 2003). Possible causes for different rates of PTSD associated with violence and aggression amongst Canadian ambulance workers and the general public may be due to objective and subjective assault severity or other factors such as differences in the predictability of the assault (Ehlers & Clark, 2000). Levels of anxiety and depression were also assessed for the current sample and both were within the normal range. However, anxiety ratings were higher than ratings of depression.

The overall pattern of results suggested that there were very low levels of PTSD symptoms in this sample of healthcare workers. One of the possible reasons for this was the low level of participation in the study and therefore this sample was not representative of the population as a whole. Response rates for similar research with this population have ranged from 72.4% (Jonsson & Segesten, 2003) to 22% (Wastell, 2002). Clohessy and Ehlers (1999) hypothesised that amongst ambulance workers there might be a reluctance to report distress following traumatic incidents owing to a concern over showing their vulnerability or a concern over confidentiality. These

concerns may have impinged on the number of incidents reported in the first instance. However, this was not investigated in Study 1.

Strengths and Limitations

Site 1 and 2

A longitudinal design was chosen because it had the advantage of allowing the exploration of the development of PTSD symptoms as they occur, thereby reducing recall bias. This is particularly important when assessing for peri-traumatic processing and contributed to the decision to contact participants within 10 days of the incident. The cost of having 3 data collections could have been to: increase attrition; increase the bias in who remained; result in no information on what had occurred between time points; potentially cause participants to change through taking part in the study (Menard, 1991); and repeated exposure to similar questions could have led to familiarity and response bias (Ruspini, 2000). The cost of a short time-frame within which to contact participants meant that 11 were excluded.

The outcome measure was the symptom cluster sub-scale of the PDS (Foa, 1995). According to Laposa and Alden (2003) the use of the sub-scale alone is a limitation as criterion A, E and F from the DSM-IV criteria for PTSD are omitted. Criterion F could have been particularly useful in the current study as it would have identified if a participant's work had been impeded by the incident. Although not the purpose of this study, this information would be useful for employers.

The review by the Leeds East Research Ethics committee concluded that we were not allowed to contact staff directly following an incident. They did not want us to speak directly with staff and interfere with the existing post-incident procedure at the research sites. However, it would have been preferable for us to be able to call staff directly following the risk manager's/CAMS gaining verbal consent for us to contact them. This would have allowed us to explain the research with greater understanding and commitment and answer any questions and concerns staff may have had about the research.

The questionnaire pack and method of data collection was not piloted with hospital or ambulance staff prior to data collection commencing. This was in part because the method of data collection and questionnaires were similar to that of the previous research conducted by the thesis supervisor. However, with hindsight there were crucial differences namely we were not able to speak directly with staff following an incident and there were more questionnaires and 3 rather than 2 time points. If we had piloted the study it is likely that they would have requested fewer questionnaires and that

the researcher be directly involved in recruitment. Having the backing from staff may have increased the likelihood of Ethics allowing direct contact with staff.

The focus of the research was on the impact of violence and aggression on hospital and ambulance staff. This was because much of the literature focuses on major incidents or routine gory or distressing scenes. The Ehlers and Clark (2000) model had also been considered in relation to assault victims but not verbal and physical assault in a workplace setting except for a doctoral thesis (Salter, 2003). Therefore this thesis aimed to fill these gaps in the literature base. The study also set out to replicate aspects of findings from an earlier thesis (Salter, 2003) which focused on violence and aggression against hospital staff. The costs of this specific focus meant that it was possible that confounding influences from other types of traumatic events could have been influencing the psychological state of participants when completing the questionnaires. However, one item on the Background Factors Questionnaire referred to whether participants had experienced other traumatic incidents and this would have allowed this to have been controlled in the analyses.

The study set out to investigate the mechanisms within the model leading to the onset or maintenance of PTSD symptoms. For a more valid test of the model it would have been beneficial to have a greater number of participants with symptoms of PTSD, than is typically found in similar studies (e.g. Halligan et al., 2003).

The limit of a 3 months follow-up could also be criticised. Most studies investigating persistent symptoms of PTSD collect data for 6 months or more. An extension could increase the number of participants and the number with symptoms of PTSD.

Site 1

Prior to commencing the research, the researcher met with the head of Health and Safety and presented to the staff representatives. Information on the number of incidents of violence and aggression and on the incident reporting system was gathered. However, the problems within the incident reporting system and the variability in the number of incidents reported (i.e. 360 in 2004 and 121 in 2005) were not raised.

Utilising the existing reporting procedure for incidents of violence and aggression, in theory minimised the impact of the research on the study site, maximised the speed with which potential participants were followed up and ensured a consecutive sample rather than a self-selecting sample. However, there were extensive limitations to the incident reporting system that were only identified once the research had commenced. These included: not all staff have logins for the new computer logging system; not all know how to use it; few have time to log the incidents on a computer; the

paper incident reports often take more than 10 days to get to the CAMs and were therefore excluded; not all incidents logged were followed up by the CAMs (discrepancy of N = 45 between questionnaires sent and incidents of violence and aggression during study period).

Due to ethical constraints, the researcher was not able to speak directly to the participants and had to recruit through the CAMs. Using senior management to recruit on a personal issue such as the effects of violence and aggression on staff, may have reduced participation through fears of showing vulnerability (Clohessy & Ehlers, 1999). Enthusiasm and knowledge about the study could not be generated by a third party and may have reduced participation. Finally, the record keeping of the inclusion and exclusion of participants may have been more tightly monitored by the researcher.

Placing the questionnaires on station meant that more staff were able to access the study without fear of their management knowing. However, the cost of this was that the sample was no longer consecutive, but self-selecting, resulting in a more biased sample.

Site 2

The recruitment process was more successful at site 2 than for site 1. This could have been because: the reporting system was paper-based; it was less time consuming; it had been in use for a long period of time prior to the research commencing; incident forms were sent to the clinical risk manager rather than managers who were also associated with some everyday duties; the researcher had better access to staff to advertise the research because staff were based on one site, not in numerous stations dispersed over a wide area.

Improvements

It is evident from the limitations highlighted above that numerous improvements could have been made to Study 1.

Site 1

In addition to understanding the formal system of reporting incidents of violence and aggression, informal discussions with staff from different stations and without management present, piloting the questionnaires with staff and piloting the reporting system would have been beneficial. A more accurate picture would have been provided of the reporting system, the problems associated with it and staff's feelings about the use of the CAMs for recruitment. The number of questionnaires used would also have been discussed and potentially led to less being incorporated into the final study.

Time spent with staff would raise the profile of the study and potentially improve participation (Clohessy & Ehlers, 1999).

The researcher could have spoken directly to potential participants who log an incident and the managers could have gained verbal consent prior to the researcher contacting them. This would have minimised participants 'missed' by the CAMs and potentially reduced staff concerns over confidentiality.

The inclusion criteria could have been extended to 14 days so that paper-reporting systems could be included. It could also have been extended to include other traumatic incidents, as well as incidents of violence and aggression. This would have increased the sample size as well as potentially increasing the severity of the symptoms reported.

Codes for each pack could have been used so the source could be identified, either from the CAMs and the stations. This would allow some understanding of the number of incidents reported to the CAMs and not reported and allow exploration of any differences between the two groups.

An additional source of recruitment could have been via the Control centres. They send staff out on calls and were often the first to hear of incidents of violence and aggression. Control could have given the researcher the names and station address of the staff involved and the researcher could then have sent out questionnaires. The ethics of giving the researcher the name and work address are outlined above. Staff could have been informed prior to the research commencing that it was occuring and on receipt of the questionnaire they could decline to take part. This method could have given a larger sample size and a more accurate picture of the number of incidents of violence and aggression.

Future Research

The low response rate resulted in an insufficient sample size to allow analysis of the mechanisms within the Ehlers and Clark (2000) model. This means that this gap remains in the research base. In terms of clinical practice, knowledge of the processes that underlie the development and maintenance of PTSD symptoms is crucial. At a theoretical level, testing potential mediators and the impact certain strategies can have on maintaining PTSD symptoms, could help evaluate and establish the validity of treatments. Future research into this area of the model is till pertinent and could go some way towards the treatment of PTSD.

It has been suggested that longitudinal designs risk high attrition rates due to the repeated effort that participants have to expend (Ruspini, 2000). Hospital and ambulance staff are busy and may lack the time to fill in long questionnaires. Future research would have to retain the longitudinal

design, but could explore only one of the mechanisms within the model, reducing the length of the questionnaires.

Despite concern over the length of the questionnaires, it has been suggested that to gain an accurate picture of PTSD prevalence and the mechanisms that lead to it, it would be important to measure all aspects of PTSD (Laposa & Alden, 2003). The full scale of the PDS (Foa, 1995), could be used. This would also allow a full assessment of the impact of PTSD symptoms on the individual's functioning in different areas of their lives.

In order to accurately test the mechanisms within the model using regression, the sample size should be a minimum of 60 but ideally closer to 80+ (6 predictors) participants who have PTSD symptoms (Field, 2005). Future research should consider testing this aspect of the model with a clinical sample of healthcare staff referred for PTSD who are more likely to have PTSD symptoms, rather than researching a sample of healthcare workers exposed to violence and aggression.

Objective as well as subjective measures of incident severity should be collected. This would be possible as the incident reporting systems record the types of incidents. This would enable consideration of whether there is any difference between the objective and subjective severity ratings. Ehlers and Clark (2000) among others (e.g. Dick, 2000) suggest that it is the meaning of the incident not its presence per se that causes the distress. A greater understanding of this potential difference is important for employers if they are to better support their staff.

The literature does not suggest there is a major difference between hospital staff, in this case primarily female nurses and largely male ambulance staff, with regards to rates of PTSD and the factors in the Ehlers and Clark (2000) model (Clohessy & Ehlers, 1999; Laposa & Alden, 2003). However, it would be important to compare the two groups. It might be hypothesised that a male dominated work culture may lead to different coping strategies compared to a more female dominated one. Predominantly male environments, such as the police, have been found to develop specific coping styles (Dick, 2000) and may differ from female dominated working groups.

Information should be gathered for the number of incidents reported each year over a number of years, not just the year prior to commencing research. Consideration should be given to the times of year when incidents of violence and aggression are at there highest so that these times could be targeted e.g. Christmas and New Year.

Conclusion Study 1

Owing to the small sample size the conclusions can only be based on descriptive statistics. The major finding from study 1 was that there were minimal rates of PTSD symptoms in the response set, and no symptoms of PTSD in the moderate to severe range for the ambulance workers. Possible reasons from the data could have been that the incidents were not perceived to be severe

enough, the participants were educated and there was no significant use of maladaptive behavioural or cognitive strategies. These possible protective factors could have meant that there were indeed no symptoms of PTSD. However, it could be hypothesised that the low rates of symptoms actually reflected a low rate of reporting and therefore a true picture of the impact of violence and aggression was not obtained. For example, participants favoured support from family and friends and did not seek support from the official services, perhaps because of a concern about job security if they showed any weakness (Alexander & Klein, 2003). The rate of court proceedings was extremely low and could have suggested that there was no point in reporting an incident as it would not have been followed up in law. Finally, symptoms of PTSD could have been present but were not reported. The Ehlers and Clark (2000) model suggests some risk factors for the development and maintenance of PTSD. The majority of scores were above 0 for some of the maladaptive peri-traumatic cognitive processing styles, which could have affected the nature of the trauma memory. The appraisals of the trauma and its sequelae fell within the cut-off scores, suggesting beliefs about the world as dangerous and self-blame. Finally, many of the participants had experienced other traumas in their adult life, another potential risk factor for the development of PTSD.

These conclusions can only be speculative, but point to further areas of enquiry, the most notable being the finding of minimal symptoms of PTSD in a response set of hospital and ambulance staff.

Proposal for Study 2

The findings from Study 1 suggested that this sample of healthcare workers showed very low levels of PTSD symptoms, a low response rate and low reporting of incidents. These findings were considered of interest and led to 24 qualitative interviews being conducted to explore them further. The rationale for Study 2 will now be discussed.

The lack of PTSD symptoms, particularly amongst ambulance workers (Site 1) who showed no symptoms of PTSD in the Moderate or Severe range, was surprising. Figures for PTSD symptom scores falling within the Moderate to Severe range in the literature are much higher for both ambulance (25%) and hospital (22%) staff (Clohessy & Ehlers, 1999; Laposa & Alden, 2003). The only study with similarly low rates of PTSD symptoms (5%) was carried out with student ambulance workers and may have been due to low levels of exposure to traumatic incidents and a small sample size (Lowery & Stokes, 2005). The combined response rate was low for Study 1 (16.5%), and although this increased to 22% for Site 1 alone, this is still in line with the lowest reported response rate in the literature (e.g. 22%, Wastell, 2002). This low response rate, is in line with the small number of reported incidents at Site 1 during the 10 month study period (111), a figure well below what was expected from previous year (360).

The decision to interview only ambulance workers was taken for a number of reasons. Firstly, compared to the hospital staff, the ambulance workers reported no PTSD symptoms in the Moderate and Moderate to Severe range. Secondly, the researcher had closer links with the managerial staff at Site 1 and had spent more time talking informally on station with the ambulance crews leading to a greater understanding of the staff and the organisation.

A qualitative approach, rather than further quantitative research was thought to be the most effective way to explore the possible meanings behind the low symptoms of PTSD, low response rate and low reporting of incidents of violence and aggression. This was because the response rate for the questionnaires was not high and it seemed unwise to pursue this method of data collection further. It was felt that qualitative interviews with a researcher, unconnected to the ambulance service, could yield more information about the lived experience of the ambulance workers in the context of their organisation. It was hoped that the interviews would provide the 'unofficial' picture of workplace violence and aggression. Finally, the information gathered by questionnaires is limited to the questions asked, whereas the interviews were to be guided by prompts, allowing the interviewees to include information pertinent to them.

Quantitative methods originate from the positivist paradigm whereas qualitative research comes from a constructivist paradigm. Historically the two methods have been seen as distinct and by some as diametrically opposed (Tashakkori & Teddlie, 1998). The use of qualitative methods to gain a deeper understanding of a topic challenges the traditional view of this method as inferior to quantitative methodology. Qualitative methods have been, and to some extent still are, primarily used to gain an initial overview of the topic and quantitative research would then be used for the 'real' research. The more traditional use of mixed methods can be seen in Clohessy & Ehlers' (1999) study. The initial phase of their research involved informal discussion with staff and participant observation that then led to a list of possible coping strategies that could then be tested using quantitative methods (Clohessy & Ehlers, 1999). However, 30 years of debate that is still continuing today, has led to the development of mixed methods and has come from theorists finding a common set of beliefs that can underpin both styles of research and allow their combined use. This paradigm has been labelled 'pragmatism' (Tashakkori & Teddlie, 1998). Regehr et al. (2002) used mixed methods in line with the pragmatic view to study Canadian paramedics. Quantitative data was gathered initially and qualitative interviews were used to develop their understanding of the topic.

Figure 5 summarizes the possible reasons for low levels of PTSD in the response set that were considered prior to commencing the qualitative interviews. The reasons were developed from informal discussion with the ambulance workers and from the Ehlers and Clark (2000) theory. One possibility was that the symptoms of PTSD were in fact present within this population of ambulance

workers, but they were not reporting them. Factors affecting this could have included organisational issues, the nature of the population who choose to be ambulance workers, the methodology and the incident or symptom severity may not have been perceived as severe enough to report or fill in a questionnaire. The other scenario may have been that the PTSD symptom levels reflected a true picture of ambulance personnel not being affected by violence and aggression. This may have been because the organisation provides a sufficiently supportive environment or the population of ambulance workers could be able to cope with violence and aggression. Other possible factors may be the nature of the role itself which could provide some protection from developing PTSD symptoms. Finally, there may be very few incidents of violence and aggression that are severe enough to lead to a significant threat to life or harm and so PTSD symptoms in relation to violence and aggression are rare.

No symptoms in response set

Very few severe enough incidents.

Symptoms are there but none are reported

Symptoms from V&A. there but not bad enough to report.

Symptoms are not there

Very few/No severe incidents of V&A so no symptoms.

Organisational:
1. Culture – Not good to show that you have a weakness/Macho culture.
Not logging the incident:
1. Culture – feel that management don't care/ won't do anything about it anyway.
2. Anger at Agenda for Change so unwillingness to support new reporting system
3. Practicalities of reporting – No login for computer, takes too long to log, get interrupted by call outs, don't know how to use computer.
Not taking part in the study:
1. No time to fill in questionnaires at work.
2. Don't want to support an initiative supported by management.
3. Sceptical aim of study as the assessment tool could be used to exclude people who are vulnerable to stress.

Population:
1. Normative nature of symptom evaluation.*
2. Investment in denying own vulnerability cos' of helping role (Clohessy & Ehlers).*
3. Macho people apply for the job.

Methodology:
1. Prospective design – not enough severe incidents in the time frame.
2. Not getting to ALL staff who experience an incident of violence and aggression – rely on incident being reported on computer to station/ops manager, or staff having heard about research.
3. Researcher not able to speak to staff directly after an incident to recruit them.
4. Questionnaires long and 3 time points.

Organisational protective factors:
1. Staff asked to stand down from service and checked to see if ok by Control manager or Ops/Station manager immediately after a reasonably 'severe' incident.
2. If incident logged CAMs follow staff up and police are involved if necessary.
3. Help available in form of occupational health.
4. Trained to deal with threatening situations so think clearly during event (ie. self-referential processing and low mental defeat).*
5. Recruitment of educated staff.*
6. Police back-up if feel threatened so incident rarely prolonged.*

Population:
1.Appraisal of the trauma*
– If incident by patient who is drunk/drugs, head injury, dementia etc.. ok as ill. Not personally directed at staff.
- V&A not as traumatising in comparison to other incidents.
2. Appraisal of Trauma Sequlea*
- Discuss trauma with family/collegues, who are used to such incidents and allow corrective feedback of any negative views.
Discuss incident using black humour/
Kudos from 'tough' stories?

The Job:
1. Peer support - Work in relatively small teams often with one partner over number of years.
2. Can't avoid reminders of incident.*
3. Not intoxicated during the event because at work.*
4. Expect difficult incidents as nature of the job so not unpredictable.*

Figure 5. Planning Diagram

Key: *Ehlers & Clark (2000)
CAM = Controls Assurance Managers
V & A = Violence & aggression

Study 2 Aims

The aims of Study 2 were to:

1) Explore the finding that there were no PTSD symptoms in the response set for Site 1.

2) Explore the possible reasons behind a low response rate and a low reporting rate of incidents of violence and aggression.

3) Further explore the responses of ambulance workers to incidents of violence and aggression at work.

Semi-structured interviews and Thematic Analysis were used to achieve these aims.

Literature Review Study 2

Introduction to section

This section outlines and evaluates the literature on the impact of violence and aggression on ambulance workers and related professions.

Literature Review

Within the limits of this second literature search the literature was dominated by cross-sectional, quantitative studies from the UK, Europe, North America and Australia. The majority of studies focused on the general effects of being exposed to traumatic incidents at work. Some of the studies failed to identify which stressors they were investigating. All studies, barring one (Weiss et al., 1995) failed to state whether they included or excluded incidents of violence against paramedics. One can cautiously assume that violence and aggression against staff was included. However, this lack of clarity in many studies (e.g Alexander & Klein, 200; Bennett et al., 2004; Grevin, 1996; Jonsson & Segesten, 2003; Lowery & Stokes, 2005) means that the often cited prevalence rates of PTSD or psychological ill health, do little to elucidate the impact of violence and aggression specifically.

Despite this limitation, the quantitative studies did identify various risk factors and factors that reduced the impact of general trauma reactions and PTSD symptoms for ambulance workers. One risk factor investigated was the duration of exposure to trauma. The findings were inconclusive; Wastell, (2002), in his study of the long-term effects of Australian ambulance workers suppressing emotional reactions to general trauma, found that length of service was predictive of work-related stress, burn-out and PTSD. He showed that this was the case even when age was controlled for. A Swiss and Australian study also found that years of exposure to general trauma (Jonsson & Segesten, 2003) and workplace violence (Brough, 2005) led to higher levels of stress symptoms. Whereas, Alexander & Klein (2001), in their Scottish study found that for the majority

of their sample, years of exposure led to being better able to cope with critical incidents. The response rates for the Scottish and Swiss studies were both relatively high suggesting reasonably representative samples, although the Scottish sample was comparatively small limiting the generalisability of these findings to other services. An earlier American study compared experienced and student paramedics on measures of PTSD and personality traits such as denial. Grevin (1996) suggested that it was not years of exposure to traumatic incidents, but the personality types of people who want to be paramedics that affect how they cope with trauma. This finding could be seen as quite controversial as the DSM-IV (American Psychiatric Association, 1994) criteria for PTSD requires exposure to an incident that is experienced as threatening to life or serious harm. However, if we assume that most paramedics are exposed to traumatic incidents, but not all develop PTSD, there must be other factors explaining why some develop it and others do not.

Grevin (1996) hypothesised from her findings that denial, repression and low levels of empathy were functionally adaptive in such a chronically stressful environment. She based this hypothesis on the finding of a high use of these defensive styles in both student and experienced paramedics compared to normative samples. This hypothesis could be criticised. It appears that she is suggesting that the presence of a defensive style in a certain population, particularly experienced personnel, might be functional. She does not state why this style is functional, but perhaps it is because of the longevity of service of the experienced staff who have this style. She suggests that this style may also have long-term negative consequences such as impaired cognitive performance. However, it is not clear from the study that this style is the cause of their longevity of service. A further limitation of the study, admitted by the author, was that she had used self-report measures to measure variables such as empathy and denial and there was a danger in reifying these constructs. Alexander and Klein (2001) also investigated personality styles and coping responses in their study of Scottish ambulance workers. They found that participants who were keen to take leadership roles and had lower levels of empathy were less likely to develop PTSD. Therefore, it has been suggested in these studies that low levels of empathy (Alexander & Klein, 2001; Grevin, 1996) and emotional suppression were adaptive to some degree (Grevin, 1996). However, the use of emotional suppression and an inability to be aware of emotions was found to be positively correlated with physical and psychological stress symptoms amongst Australian paramedics (Wastell, 2002). Responses to trauma and its sequelae such as wishful thinking, negative interpretations of intrusions and dissociation in response to intrusive memories have also been found to be risk factors for PTSD (Clohessy & Ehlers, 1999).

It could be argued that low levels of emotional expression and low use of formal support services may contribute to low levels of reporting of PTSD symptoms amongst this population. Studies have suggested that an additional reason might be concern over anonymity and job security

if paramedics were seen to be suffering from PTSD at work (e.g. Jonsson & Segesten, 2003) or that there is a 'macho culture' that dissuades this type of emotional expression (e.g. Alexander & Klein, 2001). One study found that frontline managers were also less likely to report their own distress (Regehr & Bober, 2005). Under-reporting may also occur because ambulance personnel have an investment in denying their own vulnerability because of their helping role (Gibbs, Drummond & Lachenmeyer, 1993; Bartonne, Ursano, Wright & Ingraham, 1989, as cited in Clohessy & Ehlers, 1999). These possible reasons for under reporting highlighted in the literature do not appear to be based on the authors' own research. Either they appeared to be based on informed opinion or on research into disaster work, not on regular duties or violence and aggression.

Social support was identified by some of the studies as an important factor in reducing the impact of trauma. However, support was almost exclusively perceived to be provided by colleagues, family and friends not management or formal support services (Weiss et al., 1995; Alexander & Klein, 2001; Segesten & Jonsson, 2003), except for a Canadian service who used onsite psychological support (Regehr et al., 2005). Lowery & Stokes, (2005) in their study into the role of peer support and emotional expression amongst Australian student paramedics found that the quality of the support was the crucial factor, not just its presence. They tested whether different styles of support and attitudes to emotional expression reduced or exacerbated the trauma experience. Dysfunctional peer support combined with negative attitudes to trauma, and exposure to duty related trauma, accounted for 30% of the variance of trauma related symptoms (Lowery & Stokes, 2005). Without 'confiding support' student paramedics were found to develop negative attitudes towards emotional expression, suggesting that a lack of this type of support can be a risk factor for trauma related symptoms. The literature indicates poor organisation support as a risk to the psychological health of workers. Perceived low levels of organisational support, and workload, were found to be the strongest predictors of traumatic stress amongst child protection officials, not the violence or traumatic scenes they experienced (Regehr, Hemsworth, Leslie, Howe & Chau, 2004).

Quantitative, cross-sectional studies into violence and aggression amongst ambulance personnel have also identified factors associated with reducing the impact of trauma. Potential protective factors associated with PTSD or psychological strain included marital status and accepting attitudes towards violence at work (Hafeez, 2003). Supervisor support was found to moderate the impact of verbal aggression on psychological strain (Brough, 2005). Support from management was identified as one of the primary protective factors against stress and PTSD in emergency service personnel (Buunk & Verhoeven, 1991, as cited in Regehr & Bober, 2005). Interestingly support from colleagues was associated with job satisfaction but not psychological strain (Brough, 2005).

Very few qualitative and mixed methodology studies were found. There was a range of studies analysing trauma narratives, following therapy for PTSD (e.g. Foa, Molnar & Cashman, 1995; Moulds & Bryant, 2005). Support for the Ehlers and Clark (2000) model was found from these studies, particularly with respect to the importance of mood congruent narratives and low levels of memory disorganisation. Additional studies were found, for example investigating the impact of public enquiries on emergency personnel (e.g. Regehr, 2003) however the primary focus was on the experiences of emergency personnel, particularly ambulance workers, in relation to violence and aggression, so two key studies will be focused on for discussion. These studies appear to be well designed and their findings add to the current quantitative literature base.

The first study was of a clinical sample of British police officers who had experienced violence against themselves as well as other critical incidents (Dick, 2000). Thematic analysis was used to analyse how the institutional context of policing influenced the ways the police officers responded to traumatic incidents. Dick (2000) found that the officers expressed internal beliefs, e.g. 'I've changed for the worse', and external beliefs, e.g. 'The world is dangerous and unpredictable'. These beliefs, and how the incident was processed, were found to be influenced by the context within which they were articulated. Certain beliefs appeared to be more acceptable within the force than others. For example, there was a culture of being cynical and uncaring and it was felt necessary to convey this attitude in order to be accepted. Another aspect of the organisational culture was a 'macho' style that meant that staff felt that they should be able to deal with unpredictable incidents of violence. Dick (2000) argued that it is crucial to understand the culture of the organisation within which emergency personnel are operating, in order to understand the true impact of particular stressors. She suggests it is the meaning attributed to the stressor not the presence of them per se that affects the amount of distress caused. Dick's (2000) work adds another dimension to the quantitative studies by exploring the context within which interpretations and responses to trauma and to violence and aggression occur.

The second study used mixed methods to explore Canadian ambulance workers responses to trauma in general, and also in relation to violence and aggression (Regehr et al., 2002). This study began by using quantitative methods with a convenience sample of 86 paramedics and technicians. They found that 69.8% had been victims of violence at work. However, only 30% reported being significantly distressed by this incident. PTSD prevalence rates were measured using the IES (Horowitz et al., 1979) and 25.5% were in the severe/high range and 14% in the moderate range. Social support from family, friends, colleagues, management and union were not found to correlate with scores from the IES (Horowitz et al., 1979) or BDI (Beck et al., 1961), suggesting that these factors did not relate to PTSD symptoms or depression in this sample. Eighteen of the quantitative sample were purposively selected to take part in a qualitative interview. They found that none of the participants described violence against themselves as traumatic. The incidents they

found most traumatic were those that involved the death of a child and when they felt emotionally connected to the victim or the victim's family. A coping strategy described was to be 'thick skinned' and to try and emotionally separate from the victims and their families. However, this strategy had negative consequences for ambulance workers' interpersonal relationships. One interviewee stated that they had become violent against their own family. Another coping strategy was to positively reframe the incident as a learning experience. Social support was brought up as a key theme. Participants reported talking with their colleagues, but the quality of these discussions was more on the level of 'gallows humour' or 'sharing tales', rather than deep emotional support. They described a limit to being emotionally open at work due to the 'macho attitude' of the workplace. Participants were particularly critical of management and union support portraying it as non-existent. Conversely, psychological services provided by the Canadian ambulance service were well used and found to be useful. This study once again adds depth to some of the issues raised by the quantitative studies and extends the research base. However, there were limitations to the study. The quantitative sample was a convenience sample and was small therefore the sample could be biased and the generalisability of the findings is limited. Laposa and Alden (2003) have also criticised the use of the IES (Horowitz et al., 1979) as the full DSM-IV diagnostic criteria for PTSD (American Psychiatric Association, 1994) is not achieved as criterion A, E and F are excluded. This could potentially inflate the prevalence figures from this study.

Method Study 2

Introduction to section

The literature search is then followed by a description of the author. An outline of the methodological design will follow with a discussion on the rationale for the design choice. The details of the sampling, the interviews and data analysis will then be described. Ethical considerations and quality checks are outlined specifically and throughout this chapter.

Description of the Author

Unlike quantitative researchers qualitative researchers do not view themselves as objective observers or experimenters, who can be entirely separate from the research process and discovering concrete truths (Yardley, 2000). In several approaches, there is a strong Social Constructionist influence (e.g. Charmaz, 1990) where the researcher's background is considered to influence and be influenced by the research process and the findings (Willig, 2001). As Dey (1999), puts it "what we discover will depend in some degree what we are looking for…" (p.104). It was crucial for me to be reflexive throughout the research process because the analysis of the data relies on my interpretation, which entails being clear about my personal, professional and theoretical background. Miles and Huberman (1994) suggest that it would be self-defeating to not use existing knowledge to guide your research. It was important to 'bracket -off' (Elliott, Fischer & Rennie, 1999) my background influences where possible and track the ways in which they influence my analysis. This facilitates a transparent research process (Mason, 2002). By taking this reflexive stance it allowed a more adequate representation of the participants' experiences than would otherwise be possible (Elliott et al., 1999). Reflexivity ensures that the author and reader are aware that alternative interpretations of the data are possible (Stiles, 1993).

Given the rationale outlined above I feel that it is important that I let the reader know about my personal, professional and theoretical position. I am a 28 year old heterosexual, female, and I am white British. I started the interviews 5 months before my thesis had to be handed in because my original quantitative study had failed to yield a sufficient sample size. My emotional state and motivations at the time of data collection was therefore anxious. I was focused on getting enough interviews, in the shortest timeframe, to answer the questions raised by Part 1, but also to ease my anxiety. I am currently in my final year of training to be a clinical psychologist. This has meant that I have worked in similar settings to the ambulance workers and I too have experienced some levels of aggression at work. I worked with a client who had learning disabilities using Intensive Interaction techniques. He and I had been working together for a number of weeks and seemed to be progressing well, when he dug his nails into my arm and twisted them around causing bruising to my arm and some pain. I followed the methodology of Intensive Interaction and redirected his

attention and continued the session. My feelings about it were mixed. I felt contained by the method I was using and knew how to continue with the session, I felt self-critical and saw it as a failing in my technique, I also saw it as my client expressing himself and as such was part of my job to deal with it. I reviewed the session to try and work out what I might have done wrong. I then took the issue to supervision and was able to learn from the incident. Interestingly my first reaction was to blame myself not report the incident officially. It felt it was important to acknowledge the similarities (Yardley, 2000) between my experience and the ambulance workers', but not to allow any similarity to cloud the unique nature of each interviewee's experience. For example, just because I had seen my injury as part of the job, was self-critical and did not report the incident, I did not want to assume that this is how ambulance workers would respond. My first degree was in anthropology. The combination with psychology has fostered an interest not only in 'clinical' populations but also in people, their experiences and responses to difficult life events. As part of Study 1 data collection I visited the ambulance stations. This was primarily to hand out questionnaires and tell staff about the research but it also allowed me to spend time talking informally with staff and observing how they interacted with me and one another. This experience contributed to my decision to use qualitative research to further my understanding of this population. The experience also gave me a more personal insight into the difficulties they faced and led to a feeling of responsibility to this group to describe their experiences as accurately as I could not only in the form of this thesis but also to feedback to the management of the ambulance service.

The predominant theories likely to have been at the forefront of my mind when conducting this research were the cognitive models of PTSD, particularly the Ehlers and Clark (2000) model. I had also recently written an essay on consultancy with a particular focus on Social Constructionism.

Rationale for choosing Thematic Analysis

The first aim of this study was to be explored directly from the data with minimal interpretation or analysis, although acknowledging that all data is subject to some level of interpretation. Accounts that detailed violent and aggressive incidents and subsequent PTSD-like symptoms were to be looked for and directly reported in the results. However, this aim was not found to be viable using the design for this study and the reasons for this and possible alternative designs will be outlined in the discussion.

Thematic analysis (TA) was used to explore aims two and three. TA involves identifying, analyzing and reporting themes or patterns within the data (Braun & Clarke, 2006). Interpretative Phenomenological Analysis (IPA) (Smith, 1996), was considered for this study but would not have been appropriate given the aims and the nature of the sample available. I was working with a large data set and wanted to understand responses from a large number of staff. TA aided this as it allows

a rich description of a large sample. TA would allow me to identify commonalities as well as differences in the perceived causes of low reporting of incidents of violence and aggression and to responses to incidents of violence and aggression across a large sample (Braun & Clarke, 2006). These similarities and differences could then be developed into themes. A theme " captures something important about the data in relation to the research question, and represents some level of pattered response or meaning" (p.82, Braun & Clarke, 2006). If I had used IPA I would have had to priorise the unique individual account before any consideration of commonalities (Reid, Flowers, & Larkin, 2005).

Similarly theory-generating approaches such as Grounded Theory were also deemed inappropriate for this study. Grounded Theory allows exploration of a given area of interest in a process that facilitates the development of theory. The aim is to move from data to theory such that new theories can emerge (Willig, 2001). Whilst Grounded Theory does allow for the identification of patterns across data to a greater degree than IPA, the aim of the current study was to understand an area that has not been extensively studied and to develop some recommendations for the ambulance service rather than to address specific generate new models or theory.

TA can be carried out in an inductive, semantic manner which entails a process of description, summary and then interpretation which would allow me to analyse the data in a manner that keeps the themes strongly linked to data (Braun & Clarke, 2006). I felt that this was particularly important for two reasons. Firstly, I had been asked by many of the interviewees if they could be presented with the results of the study and the data would be more recognisable to them in this format. Secondly, I hoped to gain some recommendations from the data that could also be fed back to the service. Because of this data-led style TA has been suggested as a method that can be useful for informing policy development (Braun & Clarke, 2006).

TA was also chosen to address the more general aims of aim 3 as this method occupies a flexible position between other approaches. Thematic analysis can be positioned between Essentialism and Constructionism (Braun & Clarke, 2006). TA could give me descriptions of ambulance workers responses to violence and aggression that acknowledged the ways in which they made meaning of their experience and in turn allow me the flexibility to look at the ways the broader social context influenced those meanings (Braun & Clarke, 2006).

TA can also be viewed as following the Social Constructionist (Burr, 1995), the strand of Grounded Theory that is most closely related to Social Constructionism (Charmaz, 1990) and the Phenomenological (Kvale, 1983) line that does not claim to 'discover' actual attitudes and beliefs from the data, unlike traditional Grounded Theory (Glaser & Strauss, 1967). Rather the themes are actively constructed by the researcher through an interaction with the data (Willig, 2001). This active interaction with the data allowed me to identify direct and indirect references to underreporting of incidents to address aim 2.

Finally, I had some hypothesised themes prior to undertaking the research that were developed from meeting staff informally on station (Figure 5). These included: Perceived uncaring organisation; appraisal of aggressor's state; macho culture potentially limiting expression of distress; importance of social support. These themes were added to and modified as the interviews were interpreted. TA enabled this flexible approach because it occupies the middle ground between Content Analysis (Weber, 1985), where all the codes are predetermined and Grounded Theory (Glaser & Strauss, 1967) where there are no *a priori* codes. The approach is flexible and allows the researcher to lean more towards the Grounded Theory or Content Analysis ends of the spectrum depending on the type of study (King, 1998).

The proposed outcome for this piece of research in relation to the aims was to:

Aim 1) Explore the finding that there were no PTSD symptoms in the response set for Site 1.

Proposed Outcome: Gain information on whether staff had experienced an incident of violence and aggression and had developed any adverse reactions to the incident, particularly those related to PTSD.

Aim 2) Explore the possible reasons behind a low response rate and a low reporting rate of incidents of violence and aggression.

Proposed outcome: To develop themes that would relate to the possible reasons why staff would not report incidents of violence and aggression. From these themes develop a clear list of possible reasons for not reporting.

Aim 3) Further explore the responses of ambulance workers to incidents of violence and aggression at work.

Proposed Outcome: To develop themes that tell the story of how ambulance workers respond to incidents of violence and aggression in the context of their service and in relation to one another.

The Sample

Elliott et al., (1999) stress the importance of describing the participants and any relevant information about them to aid the reader to judge how representative the sample was. The planning diagram (Figure 5, p.54) and research aims provided a boundary to the sample required; ambulance workers rather than, for example, senior management in the ambulance service (Miles & Huberman, 1994). The sample consisted of ambulance workers on training days. The sample was self-selecting as staff chose to come and be interviewed however, only those staff on training days at the times I was interviewing (5 sessions spread over 3 weeks) were able to take part in the study. On resubmission, the Ethics committee were concerned that staff who had taken part in Study 1, could potentially be interviewed which may have breached the anonymity of their questionnaire data. It

was decided that the odds were unlikely as only 15/1400 staff took part in study 1 and the interviews were optional.

Data Collection

I conducted 24 semi-structured interviews that were tape recorded and were based around a fictitious scenario with ambulance workers whilst they were on training.

Twenty-four interviews were conducted. The research aims were focused on gaining a *general* understanding of the ways in which ambulance workers responded to violence and aggression as well as specific details on the low symptom, response and reporting rates. The larger sample allowed a wider range of ages, years of experience, specialty and gender to be involved in the interviews (Elliot et al., 1999). A larger sample was decided upon because each interview could only last up to 40 minutes because staff were either giving up their break times or teaching time. This time limit was decided upon following discussion with a staff representative and the trainers. Owing to the time constraints on the interview it was felt that a larger number of interviews would provide the best chance for category saturation to occur (Creswell, 1998, cited in Regehr, Goldberg & Hughes, 2002). It has been suggested by some authors that too many cases leads to poor analysis due to an overwhelming amount of data (McCracken, 1988). However, others have argued that larger numbers of cases can give the researcher a deeper understanding of the data (Miles & Huberman, 1994).

A semi-structured interview was used as it seemed to meet the pragmatic demands of a limited interview time but also suited the theoretical position of TA. TA allows the researcher to approach the data collection with some themes that they want to explore, as well as generating new questions in the light of themes brought up during the interviews (King, 1998). I wanted to gain the 'insider's perspective' on ambulance staff's experiences and responses to violence and aggression and semi-structured interviews have been shown to be effective in facilitating this process (Denzin & Lincoln, 2000). Semi-structured interviews also allow the individual to tell their story in their own words (Smith & Osborn, 2003).

The interviews were tape recorded to ensure that I could attend fully to the interviewee and focus on establishing a trusting and empathic relationship in the limited time available. Tapes were also used to ensure that none of the data was lost or censored at this early stage of the collection process. I transcribed all of the interviews for analysis.

The semi-structured interview began with a fictitious scenario (See Figure 6). It was used to rapidly focus the interview on the key area of interest (e.g. of a similar use of scenarios in Doherty and Anderson, 2004) due to the time limit and to allow the interviewees to discuss their colleagues' responses to incidents as well as their own. This was done for ethical reasons to ensure that staff had control over the decision to describe personal incidents.

The interviews were conducted on training days because this was the only time that Ambulance staff had guaranteed time-off. The alternatives were to catch them in the Ambulance stations or on their days off but neither were practical due to limited free time on duty and unwillingness from staff to be interviewed on days off. These methods of sampling would also have required a longer time period for the interviewer travelling to people's homes and stations. Recruitment may have been reduced as staff would have had to contact the researcher directly to show their interest which, judging by the return rate for Study 1 looked unlikely. Alternatively, the researcher would have had to follow-up staff and this may have led to a researcher-selected sample rather than the staff-selected sample obtained via the current method.

The initial interview questions were primarily informed by the planning diagram (Figure 5, p.54) prior to interviewing. I piloted these questions with a colleague who works in the health service and who had experienced an incident of aggression and made adjustments to the interview schedule in accordance with their feedback. Following TA the questions were also added to and altered as the interviews progressed (see Figure 6 for changes). The questions detailed functioned as a guide to the interview, allowing me to gain information on the topic of interest, violence and aggression, but also to follow the stories of the interviewee's and the topics that they prioritised. To maximise the relationship with the interviewee I began the interviews with an open question about the scenario that was focused on their colleagues, rather than themselves. I structured my questions to elicit stories and did not begin questions with 'why'. This was done in order to ground the interviewees' experiences in concrete examples rather than gain an opinion or a generalisation

Figure 6. Scenario and Interview script

INTERVIEW SCRIPT

Introduction guide: [Staff already provided with information sheet and consent form]. Thank you for consenting to take part in this interview. As you will have read it will take no longer than 40 minutes and we will be discussing a fictitious scenario about an ambulance worker experiencing an incident of violence and aggression. Please give as give as much detail as you can when describing your answers. We only have up to 40 minutes so don't worry if I move you onto the next topic during this interview. Any questions or concerns?

Interviewer reads the scenario and shows it to the interviewee:
Scenario: An ambulance worker in your station experiences an incident of violence and aggression. (can be written, verbal or physical aggression)

Questions & Prompts: Follow the lead of the interviewee
What do people you work with do if they have had such an incident?

Potential answers:
a. "It depends on……" What is it dependent on? Can you give me an example?
E.g. Who they are; Who hurt them; How bad attack was; How experienced they are

b. "What staff do is.." What did they/you do? Can you give me an example? Are these actions

dependent on anything? Do you/they always do these things or is this an unusual example?
E.g. Speak to..; Laugh it off/black humour; Have a stiff drink; Report it to..; Hurt them back; Ignore it/get on with it; Take time off work.

c. "Staff feel…" How did they/you feel? Are these feelings dependent on anything?
E.g. They are fine; They are upset/angry/scared; They are hurt; Embarrassed

[Getting specific examples that descriptions are based on]:
Get them to provide specific examples re: response to the question.
"Can you tell me about a time when a colleague/you reacted to an incident in that way?"
"What was helpful? In the short-term/long-term?"
"Can you tell me how the incident still bothers you?"

[Get reflections on the way people react to incidents and what might drive these reactions]:
"What enabled you/them to react in that way?"
"Sounds like you thought the way they/you reacted was not as helpful as it could have been?"
"Sounds like you think the way they/you reacted was the way all people in your organisation react?"
"Is the way they/you reacted something you have seen others do?"
"Sounds like the way you describe your reaction to the incident is the way you think you should have reacted".

[Getting contradictory evidence]:
If it is a positive/coping answer follow it, but then ask
"What would people do if the incident wasn't so easy to get over?"
If it is a negative/non-coping answer follow it, but then ask
" Can you tell me about a time when an incident of violence & aggression didn't stay with you? In what way was if different to the other incident you described?"
" What would people do if the incident was easier to get over?"
"Is there ever a time when violence and aggression doesn't lead to the difficulties you described?"
"Can you give me an example of such a time?"
"What was different about that time compared to the time when you/they didn't cope?"

Any recommendations to management on how they can better support you and your colleagues?
Ending:
We have now come to the end of the interview. Do you have any further questions/concerns or is there anything else that you would like to say? Thank you for your time.

Indicating prompts that were added as the interviews progressed

(Hollway & Jefferson, 2000). I was careful to word my questions so that I did not assume that the interviewees were victims of the incident of violence and aggression (Hollway & Jefferson, 2000). I encouraged examples of typical instances and those that contradicted the typical so as to facilitate the messiness of real life and to avoid reporting a homogenous picture (Miles & Huberman, 1994; Mason, 2002). I ended all the interviews with: a question looking to the future and giving them a sense of control; recommendations they would like to make to management to improve their care; and stated that I would feedback my findings to management on completion of the thesis.

Recruitment

At the beginning of the training day I introduced myself to the staff and told them about the research and interviews. I handed out Participant Information Sheets to all staff to allow them to have time to read and decide whether they would like to take part. All interviews took place in a private room on campus and near to their training room. Written consent to record the interviews was obtained prior to starting the interview. The interviews lasted up to 40 minutes and participants were asked if they had any further comments or questions at the end of the interview. They were then thanked and reminded of where they could find more information on the findings of the study.

Data analysis

TA looks for common themes in the data either across individual accounts or within them (King, 1998). Grounded Theorists call for the researcher to be clear about their focus. They differentiate between 'objectivist'; a focus on social processes, relationships and their consequences for the participants and 'subjectivist'; a focus on the quality of the individual's experience (Willig, 2001). I took aspects from both these positions in response to the interviewees who talked of their own experiences within the context of the wider organisation within which they function.

Yardley (2000) calls for qualitative researchers to be transparent about the ways in which they code their data and how they came to each theme. Elliott et al., (1999) endorse a similar process and refer to the need for researchers to ground their data in examples.

Stage 1: I transcribed the interviews listening to each interview twice to check my understanding and the transcription. This served to familiarise myself with data as rapidly as possible. The transcription conventions and process are illustrated in Figure 7. Pauses and repetitions were included in the initial transcription, but in the results section were replaced with .... for brevity.

Figure 7. Transcription conventions

"There was this kid, he was trying to bag himself in a car and then he was really violent like some kind of a wild animal [pause] it was cos' all his blood gases had gone to cock."(2) Edited to: *"... this kid... trying to bag himself in a car...he was really violent like... a wild animal... cos' all his blood gases had gone to cock."(2)*

Stage 2: I read through each interview identifying themes in the text using descriptive codes. I strived at all times to be led by the data, to develop themes that were data-based and to not interpret the text. This data-led style is endorsed by TA and Grounded Theory (King, 1998 in Symon & Cassell, 1998 ; Willig, 2001). Quotes from each new interview were either added to the existing themes or if distinct themes emerged from the interview, a new theme was added to the list. I then went back to the earlier interviews to see whether the later codes were represented. After these

stages I had 82 descriptive themes all with their supporting quotes from each of the 24 interviews. Figure 8 shows a section of transcribed interview text and the descriptive coding that took place.

Figure 8. Extract of coded interview text

" Five or six years ago now, I got pushed out the back of a vehicle by the patient's father, the lad had got hit in the face by other football fans, the dad and patient were drunk, I said to the police 'can you get the father to leave the ambulance?', but before they could intervene he had pushed me out of the ambulance[1]. It wasn't really against me [2], he was blinded by the red mist [3], it didn't bother me [4], it's part and parcel of the job really[5]. 14 years in the service now you accept people channel their anger towards you[6], but it is not necessarily to you and as long as you recognise that [2], for some of the newer members of staff they find [it] harder to accept but over time they realise that it is not personal [6]. From my own point of view it wasn't a big incident [4]."

[1] Example of incident of violence and/or aggression.
[2] Taking or not taking violence and aggression personally
[3] Interpretation of aggressor's actions
[4] Impact of violence and aggression
[5] Scale of severity tolerated
[6] Levels of Experience

Stage 3: I asked a fellow trainee with experience of qualitative research to read a section of text and develop descriptive codes for the section. This was then compared to my coding and substantial overlap was found. Where discrepancies occurred these were discussed and the codes altered. For example, the [4] Impact of violence and aggression was divided into types of response eg. 'tough attitude' or 'emotional response'.

Stage 4: I then collated all 82 themes went through them to see if they related to one another, tapped into similar themes or appeared too broad and required splitting (King, 1998). I began to be more interpretive at this stage in order to develop middle and higher order themes, whilst not referring to or reading any theories to remain close to the data. This lead to 6 higher order themes with middle and lower order themes associated with them.

Stage 5: Each of the 6 higher order themes and their associated middle and lower order themes were then drawn diagrammatically and the extracts that most succinctly described the theme were identified. As this process developed and through discussion with my thesis supervisor I felt that two of the higher order themes (Talk and Visibility of Distress) were strongly related and merged them into Communication Styles. Another theme was too broad (Security/Support) and was sub-divided into Security and Recognition. Following TA methodology the level of interpretation increased as the analysis developed and at this final stage of the analysis I allowed my clinical psychology training to inform two of the higher order themes; PTSD and Associated Symptoms and Communication Styles. I felt that I had struggled most with how to represent these two themes and this struggle was in part because of my reluctance to impose my clinical and theoretical knowledge

onto the data. However, staying in line with TA I allowed my theoretical knowledge to group the lower order themes under each of these themes.

Throughout the whole of the data analysis I tried to ensure that the names of the themes were not too abstract and would be recognisable to the interviewees as well as the readers of this thesis (Elliott et al., 1999). Being transparent about the data that was omitted is crucial if the reader is to be able to assess the validity of the analysis (Mason, 2002). The only theme that was excluded related to details of incidents that were termed "bad jobs" because they were unrelated to violence and aggression. "Bad jobs" were only included in themes when staff compared the severity and impact that the relative types of job had on them. Having a transparent methodology also requires the reader to understand how I chose the quotes to illustrate the themes. I chose those quotes that most succinctly described each aspect of the theme. I also purposefully included contradictory quotes within the Results section to ensure the 'messiness' of the stories was shown and the complexity of the themes was illustrated (Mason, 2002).

The large sample and the analysis of the data was an attempt at achieving 'category saturation' (Yardley, 2000). I noticed that saturation was close to occurring as there were very few new themes arising from the last four interviews. However, the lack of time from data collection to the thesis hand in date has meant that the iterative process could have continued. Despite this failing, Glaser and Strauss (1979) (as cited in Willig, 2001, p.40) stress that, "...the published word is not the final one, but only a pause in the never-ending process of generating theory...". Therefore the results from this analysis must be seen in this context.

Ethical considerations

I attempted to conduct all aspects of the research process in an ethical and transparent manner, and have already highlighted many aspects of this in the text above. With regards to data collection I attempted to get informed consent to participate in the interviews, by providing the Participant Information sheets early on in the training day to give staff time to consider their decision. I also checked if the interviewees had any questions or concerns about the interview and research both before and after the interviews and they had my contact details on their Information Sheet, should they wish to withdraw their consent. The research was also passed by the Leeds East Research Ethics committee.

With regards to the analysis of the data I was particularly keen to consider another aspect of reflexivity because I felt that it was central to ethical research practice. Spencer (2001) (as cited in Mason, 2002, p. 450) sums this aspect up by stressing that "A strong reflexivity...is a sense of responsibility for the consequences of a particular way of representing the words and practices of other people". This struck a particular chord for me as I felt very responsible for the interviewees as the interviews progressed and felt that I was taking on an advocacy role representing them in

relation to senior management. Stake (1995) encourages the qualitative researcher to be an advocate for their interviewees as a means of empowering them and giving a voice to their situation. With regards to writing up my findings I was acutely aware of the need to honour my commitment to the interviewees and ensure that their identities were not exposed in the stories.

Literature search

Once the qualitative interviews, analysis and interpretation had been completed I conducted a second literature search that was focused on emergency personnel, ambulance workers and included qualitative as well as quantitative designs. This order was chosen so as to minimise my bias when developing and conducting the interviews and analysing and interpreting the data. The following search terms were used: ambulance workers; paramedics; emergency service/personnel; medical technicians; violence; aggression; workplace violence; posttraumatic stress disorder; PTSD; psychological distress; psychological stress; qualitative; qualitative research; Ehlers, A & Clark, D. M. The following databases were used: Ahmed (1985-2006); CINAHL (1989-2006); EMBASE (1980-2006); PsychINFO (1967-2006); PsychArticles & Full Text. The literature from this search will be summarized in the Discussion for Study 2, but was subsequently integrated into the Introduction to Study 1.

Results Study 2

Introduction to section

This section will begin with a description of the sample. I will then present the 4 higher order themes and their related middle and lower order themes. I will provide extracts from the interviews to illustrate each of the middle and lower order themes. The following section will then provide tables and diagrams to summarise: The themes discussed (Figure 10); factors perceived to make violence and aggression a greater or lesser risk to the individual; actions and feelings indicating distress following incidents of violence and aggression; factors influencing a decision to report an incident of violence and aggression; and interviewees' recommendations to their organisation. The chapter will end with personal reflections following the interview and data analysis.

Sample characteristics

Descriptives

Table 8. Summary of Descriptive Statistics for Interview Sample

Percentage in each gender	Mean Years (range) in Ambulance Service	No.(%) in each role			
		Paramedic	Technician	Station Mgr.	Operations Mgr.
17 % Female 83 % Male	14 (9 mths - 32 yrs)	18 (75)	2 (8)	1 (4)	3 (13)

Technician = Training position prior to becoming a Paramedic
Station Manager = Paramedic who also manages their station
Operations Manager = Paramedic who also manages a group of stations

Themes

The themes that were developed from the analysis of 24 interviews with ambulance workers were unified by their focus on perceptions of risk and safety in staff and in their colleagues'. There were personal and environmental factors that either increased or decreased staff perceptions of safety. There were also factors and activities that were more closely related to the incident that served to increase or decrease their perceptions of safety and risk. Safety and risk have both physical and psychological dimensions.

Personal Factors

This theme depicts the personal factors that were perceived by some staff as influencing whether an incident of violence and aggression is a risk to themselves or to their colleague

Table 9. Summary of first and third person accounts for each theme

	Number of 1st person accounts	Number of 3rd person accounts
Personal Factors:		
Experience	13	2
Tolerance	10	6
Female Crew	0	5
Inherent Capacity	3	0
Environmental Factors:		
Safety Climate		
Organisation	8	4
Police	4	1
Colleagues	6	0
Risk Climate		
Organisation		
Undermining of informal and individual support resources	0	9
Failure to recognize impact of incident	10	2
Failure to act on behalf of staff		
Police	2	4
Failure to recognize impact of incident	2	0
Failure to act on behalf of staff	5	2
Society	10	0
No-mans-land	4	0
Actions during the incident:		
Safety	11	2
Aggressive	1	0
Processing the incident:		
Individual Thinking		
Analytical		
Aggressor	14	0
Own behaviour and responses	12	1
Avoidant	14	0
Collective Communicating	2	0
Bravado	2	3
Humour	7	5
Ordered	3	2
Emotional expression	16	2
Emotional restriction	3	6

Table 10. Summary of incidents and their consequences

Interview No.	Author	Aggressor	Victim(s) Self	Colleague	Public	Description of Incident
1	Male experienced	Patient		X		"she was in the ambulance and this guy exploded in an aggressive way…"
1		Patient	X			"transfer of a baby to the burns unit and the mother was incredibly aggressive.."
2	Male experienced	Patient	X	X		"34 yr old woman …throws herself on the floor F'ing and blinding…she pushes past me onto the floor…"
2		Patient	X			"big fit lad in a small corridor, all of a sudden he went raaaa, my mate rammed a cot into him, he was a tough guy… he was high on drugs…I stepped in…, then he went quiet...police arrived and he went barmy and they CS gassed him and got us too…"
2		Patient	X			"this kid… trying to bag himself in a car...he was really violent like… a wild animal… cos' all his blood gases had gone to cock."
3	Male manager	Patient		X		"the bloke stood in the way of the attack, the woman was the focus of the attack…grabbed and shouted at…thrown.."
5	Male experienced	Relative	X			"I got pushed out the back of the vehicle…the dad was drunk…"
5		Patient		X		"he was punched and kicked in the nether regions...it was nasty he never came back to work.."
7	Male experienced	Member of public		X		"well made taxi driver…physically attacked the driver of the ambulance...sustained injuries that put him off work for a while…the other lad couldn't do a lot to stop him thumping his made…"
8	Female experienced	Patient	X			" I was spat in the eyes and face by a HepC positive patient…I booked myself into the nearest hospital as an assault…3 blood tests…it was 6 months of torture...not knowing if I had HepC…" [3 weeks off work]
9	Male experienced	Patient & Colleague	X	X		"a drunk girl on the street she said F'off I said fine...younger lad speeds in and argues with the copper and the patient…it escalates and I had to pull him out…"
13	Male experienced	Patient		X		"a bloke had a bad incident and he is still off work, he was poorly with it emotionally, it was a threatening incident verbally and fists raised in a confined space…the patient was volatile and he was trapped…he will be back it's a matter of getting his head right…"
13		Patient	X			"quite a bad attack…if it had gone the wrong way I would not be here to discuss it…I had the upper hand…"
14	Male manager	Ambulance worker			X	"physically grabbed hold of the patient and slammed him against the ambulance and I jumped in between…"
14		Ambulance worker		X		"I have witnessed bullying…pick one out who is weak…"
14		Relatives	X			"people swearing at me and I stand and don't say a word…"
14		Ambulance worker	X			"bullies...I was party to it happening to me…it was affecting my private life…"

Interview No.		Aggressor	Victim(s) Self	Colleague	Public	Description of Incident
15	Male	Husband of patient	X			"I had a patient on board and her husband got violent and I had to kick him off…verbal aggression in the ambulance and when he got out he threw a crutch at my head and I ducked and it missed…I'll never forget it cos' I turned my back on that man…"
15		Off duty police officer		X		"he assaulted two staff and…nursing staff"
17	Male Less experienced	Member of public	X	X		"a big tall guy there in the middle of the night...he says I think I have hurt him…we walked into the bedroom, we saw some legs sticking out from the side of the bed and the other guy is in the doorway, it was our only exit...this guy had been chopped apart a bit and there was an axe there…afterwards it was oh my god…but thankfully it was ok.."
17		Patient	X			"verbal abuse…this guy was supposedly having an asthma attack…he kept stopping and shouting at his girlfriend… he told me to F'ing shut up…he stood up pointing a finger at me and said he was going to kick my head in and he kicked the door open and broke it…he was a notorious man…there might be reprisals…"
18	Male manager	Patient		X		"a female member of staff, she was a solo responder…she was sort of taken hostage by two men…"
19	Male experienced	Patient	X		X	"he was very aggressive…he was ejected from a hostel cos' of violence…he had one of these mountaineer sticks and got threatening with that…he then stripped naked and took a handful of df118 tablets…"
19		Patient	X	X	X	"there was a huge knife, mum and child behind him…this very disturbed man slashing his wrists properly, mum and baby crying…he was wanting head on confrontation…there was this tinglelingy bell on the door and that drew his attention and he became very aggressive to us…we got mum and baby out but it did necessitate us shutting the door on him as he approached us with his knife and the knife came through the door and he came through it and dropped the knife and we kicked the knife out of the way…"
20		Unknown		X		"they had not had a serious assault, but an assault, been punched, it was a female member of staff, she thought it was dealt with then later she was pushed over and it brought it all back…"
22	Female experienced	Members of public	X	X		"male colleague felt undermined and suffered flashbacks and lost his confidence in dealing with normal things in his life…it was the threat of violence, surrounded by a number of people who were very threatening…he ended up having 5 months off work…"
22		Patient	X			"a residential home or home for people with mental illnesses you take it as part of what you do…"
23	Female Less experienced	Members of public	X	X		"we got a call about a serious stabbing…but police couldn't come...it was a nasty accident there were about 20 to 30 teenagers gathering around and I was driving…other lad jumped out next thing I know 2 or 3 teenagers opened my door and were screaming at me to go and help…"
24	Male Less experienced	Patient	X			"someone spat on me…I think that is awful, to me that is probably worse than being physically punched…"

Key: Incident of violence and/or aggression that were perceived as leading to the victim having time off work or having left the ambulance service.

Experience

Experience was perceived as an important factor in determining how safe staff felt in relation to incidents of violence and aggression. Experience was primarily talked about in the first person, with two third person descriptions (13, 20) portraying a similar view. These accounts centered on the beneficial (6, 9, 12, 19, 22, 24), as well as the downsides of experience (2,12,15,17). The comparative accounts were primarily by more experienced staff (5,6,7,9,11,12,14) talking about their less experienced colleagues, with one exception (15). These discussions centered on the relative merits of being experienced. Experience is a variable factor that can be gained; however, the comparative accounts portray it as if it were fixed.

The overt storey described in the first person was that experience of previous incidents of violence and aggression provided the 'older hands' with the capacity to predict situations.

> *"you develop a sixth sense through experience...if you have someone who has worked for a long time too you have an accumulation of experience..."(12, female)*

It helped them to calm situations down (14) and to cope with them after the event.

> *"...dealing with it as you get older it is easier to leave it at work...you get verbally assaulted or pushed when you are younger, you take it home and worry about it...as you get older you get rid of it quicker you don't dwell on it..."(9)*

These interviewees made clear reference to their experience as a positive causal factor in their sense of safety and ability to cope with incidents. This overt reference to the merits of experience was further reinforced by comparison to 'less experienced' staff. These accounts were in third person and perceived the less experienced staff as less able to deal with such incidents.

> *"...obviously people do get into horrid incidents but the minor swearing is not nice but don't lose any sleep over it...younger members are too quick to jump on the band wagon." (5)*

There was only one reference made by a 'less experienced' member of staff about comparisons in experience and it was in the first person. This comparison expressed concern that experience did not lead to greater safety in the face of aggression but to staff tolerating too much.

> *"..it seems to me that people who have been in the service a while seem to accept violence..."(15)*

It might be suggested that the more experienced staffs' appraisals of the relative merits of experience served to elevate themselves from their younger counterparts or perhaps their younger selves. This elevation may have distanced themselves from the vulnerability they perceived in their less experienced colleagues. Interestingly, the 'less experienced' crew member did not appear to value the implied superior stance of being able to tolerate violence and aggression.

The more implicit references to experience showed a more balanced picture. Staff of all levels of experience, in first person accounts (6, 9, 12, 19, 22, 24), described the benefit of experience as giving them some preparation for an incident. Experience meant that some staff had learnt about particular cues that may trigger an incident. These cues included consideration of the dispositional and situational factors associated with the incident, e.g. a recurrent caller who threatened suicide and used a large knife, if there was drink or drugs involved, if the call was to a domestic, if it was a Friday or Saturday night or if the local area was violent.

> *"...you need to know your areas, there is a block of flats that is notorious and I wouldn't go in until the police arrived, that is local knowledge..."(6)*

Another benefit from experiencing other traumas was that it gave one interviewee preparation for, and an understanding of some of the symptoms that can be associated with traumatic incidents and enabled him to cope with them.

> *"...you get flashbacks with that [violence and aggression], but then again I have had flashbacks with other things, they slowly fade out, they last about a week or two...I don't worry about them...as I know why they are there, I know what has caused them and I know they will go away..."(17)*

There was a more complex picture of the downsides of previously experiencing incidents of violence and aggression. The accounts were primarily in the first person (2,12,15,17) with two third person descriptions of very similar experiences but witnessed in colleagues (13, 20). They show that although incidents provide information and learning for the staff member, previous experiences of an incident could be triggered without warning by a similar situation or person (12, 15, 17, 20) and who is left feeling very wary and perhaps at risk in a similar event.

> *"I learnt the lesson that if I can smell alcohol I ask them to stay...it was the patient's crutch and so now I don't take crutches on the ambulance...Its sub-conscious now, I say don't take that it will get lost at the hospital, actually I don't want it thrown at my head..." (15)*

Summary

Previous experience of violent and aggressive situations was perceived by many of the interviewees as a resource that enabled them to feel safe and to cope with new incidents and with the effects afterwards. However, for some there was a mixed benefit as prior experience could also cause them to feel fearful and vulnerable. In addition to these more descriptive accounts a more purposeful story was also being told by some of the more experienced staff. They used downward social comparison (Wills, 1981) with less experienced staff, which served to separate the two groups suggesting that the most salient identity was their level of experience (Tajfel & Turner, 1979). This separation appeared to allow them to distance themselves from the perceived vulnerability of their

less experienced colleagues. These appraisals by the more experienced staff appeared to as much about them and their inner feelings of threat, than their colleagues'.

Tolerance

This theme depicts the differential appraisals staff made of what constituted a tolerable level of violence at work. There was variability in the levels of violence and aggression some staff tolerated and saw as a natural part of the job on the one hand, and what some thought should not be tolerated or seen as a natural part of the job on the other. There was also evidence that these contradictory views could be held in one individual as with this interviewee who appeared to hold the former *view*, but *experienced* the latter (15).

> *" I can accept violence and put that at the back of my mind straight away...the only violent person that sticks out is him, he is always in my mind..."(15)*

Seeing violence and aggression as part of the job was described in the first person (1,4,5,8,13,16,18,19,20,24), and in third person accounts (3,5,7,15,16,22). The first person accounts described how individuals would tolerate verbal aggression as they experienced it so frequently and had grown used to it. This links with the theme of experience and depending on the individual's perspective could be viewed as either a positive or negative side to experience.

> *"...you get people swearing at you and arms waving, but you get used to it..." (8)*

There was a suggestion in the third person accounts that tolerating this level of aggression was part of the job. However, there was apparent division in whether this tolerance was good (5, 16) or not (3, 22).

> *"I think people have developed into accepting that being sworn at and spat at and being threatened is a normal part of the job, they would never report that" (22)*

The accounts that illustrated the view that violence and aggression should not be tolerated were all in the first person (1, 7, 9).

> *"...It's not part of our job to be abused by people..."(9)*

The level of violence that some of the interviewees tolerated varied from verbal abuse (First person - 4,8,13,16,18,19,20,24, Third person - 3,5,15,16,22), to tolerating physical pushing (5). Perhaps not surprisingly physical violence was seen as harder to cope with than verbal aggression (1,7). There was evident variation in what staff saw as part of the job and beyond the job. It might be hypothesised that if a member of staff holds the former view they maybe more likely to expect it and feel less at risk. However, one interviewee stressed the difficulty facing assessment of an unacceptable level of violence.

"...the whole point about this is that the tiniest thing maybe the thing that breaks the dam, whereas someone who suffers a really serious incident, they can brush it off...the difficulty for management is identifying that...the reality is you can't" (20)

Summary

Tolerance of different levels of violence and aggression appeared to differ between interviewees. The difference appeared to be linked to severity, how many incidents staff had experienced and to their view of being an ambulance worker. It could be hypothesised that staff who said they could tolerate a great deal were actively defining themselves as 'safe' rather than 'at risk' or a 'victim'. Like more the experienced staff, one could suggest that they were comparing themselves to those who could not tolerate much and who were therefore more at risk of being affected by incidents.

Female Ambulance Workers

Being a female ambulance worker was perceived by some of the male interviewees to be a factor that influenced whether an incident of violence and aggression was to be of risk to the individual during and after the incident. The accounts were all in the third person by male staff *(3,11,13,15,24)* about their female colleagues. The manner in which some of the male interviewees talked about female staff appeared to create a difference in their perceived coping capacities. Some noted the difference between their levels of physical vulnerability in the moment of an attack.

"...a female crew might feel more threatened than an ex-military big guy..."(24)

Other interviewees highlighted differences in perception of an incident that appeared to show female staff as more emotionally vulnerable.

"one guy saying I wasn't affected and the other was a female and she was grossly affected by it...so the perception was very different..."(3)

The acceptability of showing distress was talked about in terms of the gender of the person but only in the third person by three of male interviewees. It was suggested by one of the interviewees that female members of staff were more likely to show distress (11, 13, 15) and that this was a good thing to do.

"...there is nothing shameful female or male to come back to station and have a cry and it is a shame men don't show their feelings..."(11)

However, the implication of comments made by another male interviewee were that female staff showed distress following less severe incidents, and for men's distress to be acceptable it had to be following a very severe incident.

"...with a female you might expect them to feel threatened, but this was not a small chap... it must have been bad enough..."(13)

Summary

There was a sense that a person's gender, like their level of experience, was the salient group identity, rather than their crew status, when making appraisals about the relative vulnerability of female staff when faced with aggression. This allowed the apparent vulnerability of female crewmembers to be separate from the male crew and the contrast may have made them feel more secure about their own safety and capacity to cope with similar situations.

Inherent capacity

This theme depicts how some staff perceived themselves as having an inherent way of dealing with situations of violence and aggression that were not to do with experience or their gender. The accounts were all in the first person, about themselves and the authors were two men and one woman *(4,6,8).* All of the accounts depict themselves as having an inherent defense against being emotionally affected by incidents of violence and aggression.

> *"...not a lot phases me to be honest...when you do a job your emotions go out of the window and if you were too emotional you couldn't do the job..."(8)*

In summary, like the perceptions of female crew and more experienced crew, it could be suggested that these interviewees are comparing themselves with those people who do not have an inherent capacity to cope as a means of reinforcing their sense of safety and strength.

Environmental Factors

This theme depicts the aspects of the organization that led staff and managers to feel either safe or at risk in the face of violence and aggression.

Safety Climate

This theme depicts staff and managers' experience of the aspects of their working climate that provide physical and emotional support in the face of violence and aggression. The working climate includes the ambulance service organisation, the police force with whom they frequently work and their colleagues.

Organisation

Aspects of the organisational policy *(4, 10, 11, 19)* were talked about as providing protection in equal measure by managers in the third person and staff in the first person. The sense from first person accounts was that policy allowed staff to refuse to treat patients if the situation was threatening.

> *"...he then stripped naked and took a handful of df118 tablets in front of me...I didn't try and stop him cos' of the risk..."(19 Crew)*

The managers' accounts (10, 11) also noted the option of refusing to treat as well as stating that staff could take time off to recover following an incident of violence and aggression. The staff in

the Control centers were also seen as sources of protection (4, 10, 15, 18, 23). First person accounts by staff and managers portrayed Control as protective.

"...Control told us to drive away..."(15 Crew)

"...our Control room are more aware and ask questions about the job...they follow a script if it is an assault, ie. were there any weapons used, is the assailant still there etc..."(18 Manager).

One manager described how Control staff were able to provide some protection by informing crews of risky areas or patients. However, this was not due to protocol but because of the locality of one of the Control rooms.

"...control can assist as they are aware of regular offenders...X has an advantage as it is in the police station and they have a white board and they can inform crews to stand off until police arrive..."(10 Manager)

There were some accounts that portrayed managers as sources of safety and support *(8, 9, 10, 13, 18, 22)*. These accounts were primarily in the first person by staff, with one manager account.

"...I did get stood down..."(8)

This view of a safe environment provided by management was portrayed with less conviction when related to managers taking action against perpetrators of aggression. Only two interviewees *(5, 10)* suggested that management took action if staff had been victims of violence and aggression, one was a manager and both statements appeared to be personal opinions rather than related to a specific example.

"...I know my AGM is very aggressive in getting a prosecution..."(10 Manager)

Finally the most favourable, supportive view of a manager providing emotional and practical support for staff, came with a caveat.

"...my manager did come in the middle of the night, he is the exception to the rule"(22)

Police

Both the first person accounts of the staff and the third person general description by one manager suggested that for some the police were able to offer protection *(10,23,24)*.

"...the police were there...and I turned around and I had confidence to say you are interfering with the treatment so you will have to leave..."(23 Crew)

"...we do however have police backup for any call..." (10 Manager)

There were two first person reports *(7, 17)* by staff, of a successful prosecution by police. One was due to the fact that the individual was wanted for other offences and the following was due to a very severe and unprovoked attack on an ambulance worker.

"...the assailant...was arrested by the police...he got 6 months in prison it was as bad as that..."(7)

Colleagues

There were numerous first person *(4, 6, 7, 9, 20, 24)* accounts describing the sense of mutual physical protection that was offered by crew members.

"...you are entirely reliant on your colleague and them on you, you watch their back, they watch yours..."(20)

The informal sharing of information about dangerous patients or areas was cited as a means of protecting one another and caused staff to report an incident.

"...if you're threatened with a knife or syringe I'd let Control know so they can log it and let others know..."(4)

The protective element of the relationships between colleagues extended to emotional protection and was so strong that their relationships were likened to family relationships.

"...it is like a little family and you have your own little structures, which is separated from your Ops supervisor and the higher managers..."(24)

As this quote stresses, the sense of community or family felt by the 'road crew' was reinforced by being in direct opposition with 'operational staff' and 'civilians'. The following quotes illustrate this sense of separateness and shared identity.

"...we are a unique group, we come back and debrief ourselves..."(6)

"...you need to understand the culture...I came from an office with ordinary people as I call them..."(9)

Summary of Safety Climate

The accounts by crew about the organisation and police were primarily in the first person, whereas the use of generic terms such as 'we' or 'you' that may emphasise a group view were only used in relation to inter-colleague protection. One might hypothesise that the views expressed by staff about the safety provided by the organisation and policing were talked about less consciously. This hypothesis is derived from the manner in which these accounts were discussed. They were in the context of describing a specific event. In contrast the views about support from colleagues were spoken about using collective terms and came across from the transcripts as a more overt and general story that I was being told that set staff in opposition to managers and the public. The managers' descriptions tended to take the form of listing the resources on offer, rather than providing specific examples of their use.

The implication for some staff of having a safe working environment supported by the organisation, police and their colleagues was that it seemed to provide them with greater confidence

to act in a self-protective manner. The literature on organisational health suggests that if there is congruency between safe and protective policies and managers that act on them, staff learn that their well-being is important to management. This has been found to relate to fewere injuries and mental health-problems in the workplace (Zohar, 2000). Despite these positive implications and portrayal of aspects of ambulance workers' environment feeling safe, there were hints at some fragility in this concept in one of the examples (22) and the riskier view of the workplace will now be discussed.

Risk Climate

The organisation and police were also portrayed as creating a risky climate within which ambulance staff had to operate. There were three themes that summarized the key ways that staff felt unprotected by their organisation: Undermining of informal and individual support resources, by both their organisation and police: Failure to recognize impact of incident; Failure to act on behalf of staff and management. In addition, to staff feelings of insecurity, the managers interviewed appeared to be in a vulnerable 'no-mans-land' that left them in a similarly insecure setting.

Organisation

Undermining of informal and individual support resources

Various policy changes were described as undermining the inter-colleague support networks and the individual's own capacity to protect themselves. All of the accounts that make up this theme were by crew *(2 ,3, 6, 9, 12, 20, 22, 23)*, barring one by a manager regarding training (18). The terms 'you' or 'we' were used and this is one of the few themes in which this linguistic structure occurs so consistently. The meaning of the use of these general terms can only be hypothesised about. They may serve to distance the speaker from their account. However, in the context of this theme it might be argued that 'we' or 'you' are used to include their crewmates, perhaps to lend weight to their account and place them in collective opposition to the organisation that they are critiquing.

Policy changes had resulted in more staff working alone rather than in pairs and having to respond to calls within a set time period. Firstly, there was concern over a lack of physical protection, but perhaps more importantly, the lack of time and of someone to talk with after an incident, left many staff feeling emotionally vulnerable.

> *"...working singularly you are more vulnerable, you can't watch your own back, the problems with this will only come out in time..."(6)*

> *"...if you work as a single man out for most of the day you do not have anybody to form counsel with, to discuss with, to fall back on and I feel that that is a fault..."(12)*

The structure of some of the stations also meant that some people did not work with regular partners which could cause problems if staff were unfamiliar with one another.

"if you are working with someone you don't know it adds an edge to a situation, you don't know what support you will get, you don't know how they will react..."(12)

Due to data protection and patient confidentiality, Control and fellow crewmates should not have warned staff about notorious patients and were unable to protect each other.

"...we can't tell other crews that this patient is known to be violent, so we send them to them without forewarning them...you feel a bit redundant and negligent and it is soul destroying when a crew comes back and says he pulled a knife on me and we go he is always like that..."(22)

These policy changes were viewed as stripping staff of the physical and psychological colleague support networks and as the Conservation of Resources (COR) theory (Hobfoll, 1989, 2000) suggests, this led to a sense of threat and stress amongst some of the staff.

There were also no policies that allowed staff to take self-defensive measures against patients like searching or restraining them.

"...you can't check their pockets...we can't do anything really, we've no protection, if you try and protect yourself then you would have to go to court and explain..."(23)

In addition many staff commented on the lack of suitable training they had received from the organisation in how to deal with violence and aggression and this left them feeling vulnerable. The experience of this interviewee seemed to imply that training in dealing with violence and aggression was not a priority for the organisation as he would have to do it in his own time.

"...we have had no training in 25 years with how to deal with it...how to diffuse it, how to recognise it...all I know is what I have learnt the hard way...people do go on violence and aggression courses, I have applied 2 or 3 times and not got on it partly cos' I have to do it on a day off and I won't..."(9)

However, there seemed to be mixed reports on what training was available, with one staff interviewee stating;

"...you get no training in it and you just do what you can..."(23)

and another staff and manager stating that training was available;

"...an even bigger one is the avoidance of violence and aggression course...it certainly gets people focused on their role in contributing to the incident..."(20).

"...we are trained in how to deal with violence and aggression, so that is there..."(18)

This confusion is suggestive of a lack of coherence in the support the organisation was providing its employees or of inconsistent provision across different stations.

Failure to recognize impact of incident

Managers *(3, 8, 9, 13, 14, 16, 19, 20, 22, 24)* and occupational health staff *(22, 24)* to a lesser extent, were perceived as contributing to a sense of emotional vulnerability amongst staff. The accounts surrounding a lack of felt support by management were primarily in the first person and those that were not, were specific examples that had been witnessed by the interviewee. Many staff reported that managers failed to recognise that they had been affected by incidents of violence and aggression and reported a feeling that management did not respond to their requests for support.

> *"...I got back to station, I tried to tell my supervisor but he went off on a call..."(8)*

There was also the feeling that managers failed to offer support or care.

> *"...I gave a brief statement to the police and then straight back to another patient...I probably would have liked a visit from management to let off a bit of steam..."(16)*

When staff sought sources of help externally it was perceived in this third person account that this need was not prioritised by management.

> *"...it is problematic to get time off for the appointments...this young lady had these appointments booked and on her very first appointment she was told they were too busy..."(22)*

The failure of management to offer help was perceived in this third person account to make existing problems worse.

> *"...if he had been offered support earlier he may have not been off...it took another vulnerable situation for them to notice him...he left his colleague in a vulnerable position before they noticed..."(22)*

The perception was that the priority of management was the speed and manner in which the job was done, not the personal state of their staff. The use of 'you' in this extract appears to replace 'I' as the interviewee had experienced an incident of being spat at that she refers to. This linguistic structure may have served to distance her from the hurt that management's lack of interest in her had, had.

> *"...with X it is up to you and management only notice when you start making mistakes and by then it could be a major problem...with the spitting incident they were most worried about the time it took to turn that job around...but not much about how are you..."(24)*

One of the managers was aware of management failings and appears to use the term 'we' perhaps to attribute the failings to all managers rather than just himself.

> *"...we are too busy, we are not watching...we don't see staff anymore..."(3)*

It was suggested by two staff that occupational health failed to offer support and care when they had accessed it. Both interviewees stressed the lack of confidentiality from the service.

"...there is a 24 hour help line and the first thing you hear is 'this message is being recorded'...I would love to know the figures of the number of people who put the phone down.."(22)

Considering the concerns around the expression of distress within this group of workers this apparent lack of confidentiality could have been a critical failing.

Failure to act on behalf of staff

The third theme illustrating how the organisation was perceived as creating a risky environment for staff was its failure to pursue prosecutions or at least officially record incidents of violence and aggression. The accounts were all made by staff *(6, 8, 22, 23)* and like the theme *Undermining of informal and individual support resources,* the use of the generic 'we' or general term 'management' were used in all but one case (8). Again it might be hypothesised that this served to separate the crew from the 'management' and lend weight to their account by using a collective term.

There was a need highlighted that legal action should be taken following incidents of violence and aggression.

"...we want justice done..."(8)

However, it was evident that many staff felt that the managers were not taking action against the perpetrators of the aggression.

"...management don't pursue it as much as they should with the police...this means they report it less..."(6)

As the above quote suggests this apparent inaction by management was one of the key reasons staff said they would not bother to officially report an incident. It was felt by some that their report and perhaps therefore the fact they were a victim, was not important to management.

"...there's no point reporting it [to management], it just gets filed somewhere..."(23)

This lack of action seemed to have left one interviewee feeling like they had to fend for themselves.

"I had to go to the police station myself...my GSO would not have followed it up.."(8)

Not only were management felt by staff not to act on incidents of violence and aggression by prosecuting the perpetrators, the NHS was also seen to fail them *(7, 22, 24).*

"I think the zero tolerance policy is a fiasco as we can't and don't prosecute everyone...a person was attacked and bitten on the ear, they went to court and the aggressor was fined £50, but he was unable to pay so the staff member felt he had wasted his time..."(22

Police

For some of the staff and managers there was a general sense that the police failed to protect them and reduce their feelings of being at risk. The discussions were all in the first person, with two managers (10, 11) and five staff *(2, 5, 15, 22, 23)*. The sentiment of both staff and managers were aligned in their dissatisfaction with the level of police protection.

> *"...it is hard to get the police to come to your assistance..."(23)*

Failure to recognize impact of incident

The police and the law were described by managers and staff as failing to recognise the effect that violence and aggression has on their service. Interviewees pointed out that the law protected police officers and they would react strongly if their colleagues were attacked, but this protection was not there for the ambulance workers.

> *"...the police called 6 months later and asked if I wanted to press charges and I said it's a bit late now...you were there, you saw it...if the bloke hit a policeman his feet would not have touched the ground..."(5)*

Managers spoke using 'we' which appeared to align them with their crews in relation to the police, hinting at inter-service tensions. However, no crew made reference to an alignment with management in relation to the police.

> *"...we feel as though we are the lower end of the pecking order or market for being assaulted, everyone can have a go...them and us if you like, we are part of the emergency services, but we feel left out and not recognised..."(11 Manager)*

Failure to act on behalf of staff and managers

The police were also viewed by some to fail to act on behalf of the crews or managers following incidents of violence and aggression *(5, 10, 11, 15)*. The managers gave accounts that were not linked to specific examples, whereas the crew gave first person accounts.

> *"...I do believe the police brush it aside as they think it will be turned down by the Crown Prosecution..."(10)*

One interviewee was concerned that the police did not take action against the perpetrators implying that violence against ambulance workers was acceptable.

> *"...I was very concerned that the police didn't pursue it, they said cos' the crutch didn't actually hit me...I was very willing to press charges as I thought I shouldn't have to put up with that...it was brushed under the carpet..."(15)*

Society

In addition to the contribution to a sense of being at risk made by the organisation and the police, 'society' was also portrayed as dangerous. The accounts were all first person comments that did not appear to directly relate to a specific event. There was an overriding sense that violence and

aggression were on the increase and that staff were in increasing danger as a result *(2,3, 7,8,10,11,14,15,19,24).*

> *"...20 years ago, you could go into any situation and it was safe...but in the middle 80s you noticed the difference..."(7)*

However, three interviewees stated that they felt there was no real problem with violence and aggression (11 Manager, 21 Crew) or at least no major increase (9 Crew). This may have been due to the rural location of their stations.

> *"...to be honest it doesn't really happen...the Dales are changing but at the moment it is not an issue or not that I know of..."(21 Crew)*

No–mans-land

The position that some of the Managers described themselves in appeared in itself to be vulnerable for them. Three of the five managers interviewed (10, 11, 18) described the apparent out-group status between themselves and higher management, crews and police. This position meant that they were witness to the distress and frustrations of both sides which appeared to cause them some distress. This interviewee in particular seemed to be concerned about the protection provided to crews, but could also see the difficult job facing higher management.

> *"I am frightened by the sorts of situations crews have to go to, but I know the other side of the fence and I know management are trying to do something..."(18)*

There was a sense of impotence for some of the managers who were keen to stress the support they *tried* to provide for their staff, but there was uncertainty about whether they were successful.

> *"I hope my appearance will also help them" (10)*
>
> *"I hope she feels supported..."(18)*

Many of the interviewees felt that their managers were not following up their concerns. However, it was made clear by two of the managers interviewed that they were in a difficult position because it was the police who were not following up the complaints that they made to them.

> *"I'm the guy in the middle, I am getting it from the victim and the police..."(11)*

Although the road crews also found the police's attitudes difficult, there was no recognition of the situation that management were in by the road crews interviewed.

The accounts show a picture of managers who are concerned for staff however there was some evident to suggest that not all were able to be empathic. Some appeared to attribute culpability to staff for the aggression or violence that they encountered.

> *"...the guy we were talking about he had 4 or 5 incidents and in my view that is he is talking to the patient wrong..." (3)*

Summary of Risk

Staff appeared to seek help from management or at least desire it, what Knapp et al. (1997) call advocacy seeking in their typology of coping. However, there was an overriding sense from staff that this help or recognition of need was not provided. The resulting attributions that staff appeared to make about management were that they only cared about the job and were unresponsive to the emotional impact on the individual, perhaps reinforcing a culture of not revealing emotional frailty. The staffs' sense of being at risk due to failures by management and the organisation were furthered by their perception that they failed to act on staff accounts of incidents of violence and aggression. This appeared to contribute to a reluctance to report incidents as well as a sense of apathy and separation from the management. Zohar (2000) suggests that employees learn if their well-being and safety are important to management and this is reflected in employee mental health and levels of absenteeism.

Staff and management perceptions united in their attributions over police failures. They attributed the failures of the police to act on behalf of the ambulance service and recognise the impact of violence and aggression as being due to internal beliefs rather than situational factors (Jones & Nisbett, 1972). This attributional style resulted in a very critical view of police and a felt sense by staff and managers of not being protected by them.

This sense of working in a risky climate was further reinforced by the perception of some of the interviewees that society was also threatening and violence and aggression had increased, although not all interviewees shared this view.

The managers described the vulnerability of the position that they found themselves in. The implications of being positioned between staff and the police, and staff and the organisation was that the managers were stressed, had a feeling of impotence and for some appeared to attribute blame to staff for the incidents of violence and aggression.

Actions during the Incident

The Actions theme depicts the behaviours that staff described themselves and their colleagues using during an aggressive incident. The actions took two forms: Safety actions; and Aggressive actions. The safety actions served to reduce the aggression and take control of the situation so that staff or their colleagues were not hurt. The aggressive actions were a more defensive or reactive style of behaviour that was portrayed as negative and were perceived to have been provoked or caused by external factors to their colleague. It could be argued that even staff who were acting aggressively were trying to reduce the risk to themselves, even though this was often not the outcome.

Safety Actions

Some of the staff described actions in the first person that were self-protective *(4,6,7,9,11)*. Staff referred to the protection they have from service policy that allowed them to protect themselves by refusing to treat abusive patients or their relatives and friends.

> *"If they become violent or swearing at us I just turn around and leave, that is policy..."(11)*

Other interviewees referred walking away from situations that appeared threatening and this strategy was facilitated by experience.

> *".....as I get older I can walk away from it...when you are 50 you couldn't give a shit if they fell down dead in front of you, you just walk out if they are giving you all that..."(9)*

Others described using actions that de-escalated aggressive situations *(3, 6, 8, 9, 13, 14, 16, 22, 23)*. The majority of the quotes were in the first person. In order to reduce violence and aggression the ambulance workers suggested they had to present certain personas. One was to portray their professional side.

> *"I back away if they don't wish to be helped...it helps to maintain that professional attitude..."(16)*

The second was to show their human side and be considerate with patients.

> *"...ask the name of the patient before you rip their shirt off to get the leads on..."(3)*

The third persona projected was a calm, communicative one.

> *"...get them to tell you what has happened...you have to defuse it by staying calm..."(8)*

A final way of taking action with the aim of reducing the threat of the situation was by managing colleague aggression (9,14).

> *"...there was a drunk girl on the street she said F'off, I say that is fine...then the younger lad speeds in and argues with the copper and patient and all her friends are there and it escalates and I had to pull him out..."(9)*

Aggressive Actions

Aggressive reactions to incidents of violence and aggression were primarily descriptions by staff about their colleagues *(1, 2, 3, 9, 10, 14, 15, 18, 19, 21, 23)*, barring one (19). These third person accounts appraised aggression in others as a way that certain staff coped with aggressive incidents either because of a learnt strategy from their previous or current environment.

> *"...we have an ex-army lad, a number of our lads are...they are used to a different system...they are aggressive..."(9)*

> *"...city crews surrounded by drinks and drugs and they get as bad as them in some ways..."(21)*

or because they felt they had been provoked;

"...the patient made idle threats about his family and he snapped and grabbed him..."(14).

There was an implied sense in one account that violence towards the public by the emergency services was to be expected following repeated provocation.

"I feel sorry for the police...like that Christopher Alder case...they had been getting it all night...they've been unlucky that is all...every week you get it..."(2)

The one interviewee who talked in the first person about his own aggression stressed that it was verbal abuse only and was in response to aggression, not initiated. I got the sense that he was displaying aggressive coping as tough, resulting in him being unaffected by aggression and emotionally safe.

"I could be abusive back verbally, I give as good as I get..."(19)

Summary of Actions during the incident

The use of safety actions to cope with an aggressive incident was discussed in the first person and any appraisals made, portrayed this style as evidence of staff being in control and feeling safe with such incidents.

The use of aggression was described in others and in the third person. This way of talking about aggression may have served to distance the interviewee from what appeared to be evidence of staff being at risk or losing control. However, the attributions made about the aggressive actions were external to the individual, either because their behaviour had been influenced by their environment, or they had been provoked. This meant that even those staff described as aggressive were not portrayed as inherently so.

Processing the Incident

Processing the incident appeared to take two forms: the first that will be described was centered on individual thinking about the incident; the second describes communicating about the incident with colleagues.

Individual Thinking

Two ways of dealing with the incident in an individual manner were described. Firstly, there was an analytical approach which appeared to be about trying to deal with the difficult feelings that incidents bring up, with varying levels of success. The second was an avoidant style that appeared to be about trying not to think about or feel the impact of the incident at all.

Analytical

Analytical thinking entailed trying to cope with incidents of violence and aggression by trying, sometimes unsuccessfully, to analyse the meaning and the impact that certain aspects of the incident might have had. There were two main aspects of the incident that staff appeared to review in this way: The aggressor's role in the incident; and their own behaviours and responses during and after the incident. These different analyses seemed to relate to the emotional vulnerability as well as in some case physical vulnerability that some staff felt.

Appraisals of the Aggressor

All the descriptions that make up this theme come from first person accounts *(1, 4, 5, 6, 7, 8, 10, 12, 13, 14, 15, 19, 23, 24)*. There seemed to be a process of categorising the aggressor and their actions with the apparent aim of making sense of their actions which appeared to reduce staff's distress and emotional vulnerability in relation to the event. Being empathic and understanding why someone might have been aggressive seemed to be used by some staff.

> *"...transfer of burnt baby to burns unit, the mother was incredibly aggressive, the way I dealt with that was by believing the mum transferred her guilt onto us, as it was her fault the baby had been burnt..."(1)*

Many of the interviewees also stressed the importance of seeing the aggressor's actions as situational rather than internal to the attacker or to them (Antaki & Brewin, 1982). This attributional style was aided by experience and seemed to allow staff to see the attack as not personally directed but owing to anger at the situation, loss of a drug fix, or targeted at the uniform.

> *"it wasn't really against me...he was blinded by the 'red mist'..."(5)*

The state of the aggressor was also seen as an important factor in making sense of the aggression, and on the impact it had on them as victims. The aggressive actions of patients who had head injuries, hypoxia, who were in diabetic comas, mentally ill or old were attributed to their psychological or physical state and their aggression was not seen as intentional or controllable (Weiner, 1995) and were therefore less of a concern.

> *"...it would be a poor ambulance person who can't differentiate between a head injury versus a drunk...that is a medical condition, not violence and aggression...less toleration for the drunk because that is self induced..."(6)*

However, attributions about patients who were intoxicated with drink or drugs perceived their state and perhaps by default their aggression as intentional and controllable. The implication appeared to be that the aggressor who does not meet these exceptions is more of a threat to the ambulance worker's emotional coping, either because the incident was perceived as a personal attack (24), or because it was unexpected as these patients are unpredictable (12).

There was the implication that one had to be able to make some sense of the aggression in order to stay in the job.

> *"I've been in the ambulance service 20 years so have to deal with stuff in that way to survive...I try to understand why people get upset and angry..."(1)*

However, if the attack was felt to be personal, the impact on the individual was more damaging.

> *"...this is too much in my face, too much to me personally, I can't put it in a category...this is me they are after..."(13)*

The above examples of making sense of the aggressor's behaviour seemed for some of the interviewees to serve a positive function for the ambulance workers following the incidents. However, one interviewee pointed out that his understanding did not necessarily reduce his fear.

> *"...being able to understand why people do it...doesn't permit them to do it or lessen how I feel about it...my heart still starts beating as much as the next persons..."(1)*

Appraisals of Own Behaviour and Responses

This theme depicts the processing of the incident that entailed staff appraisals of themselves in relation to incidents of violence and aggression. This involved a dialogue with the self, rather than with others. The visibility of the ambulance worker's own emotional distress to themselves was something three noted in first person accounts, as a key to accessing support to help make sense of the incident, but this was sometimes difficult to reveal (12, 17, 22)

> *"...if you want help later you would have to actively seek help which means you have to admit it to yourself..."(22)*

It appeared that to feel the need to seek help staff had to feel the difficult emotions associated with some incidents. Analysing their role in an incident seemed to provoke such difficult emotions for some of the interviewees. This resulted in a questioning of their capabilities and in some cases a sense of guilt. These accounts were all in the first person *(1, 9, 12, 13, 15, 17).*

> *"...maybe I slipped my guard that day...maybe I inflamed the situation I can't remember..."(15)*

One interviewee suggested that violence and aggression was different to other jobs they faced precisely because they may have had some impact on it.

> *"...when you go to a serious incident, the incident has already happened, it was not your fault...when there is violence and aggression more often you don't know whether you have instigated that by your body language, by being you..."(12)*

The attributions staff made about their role in the incident appeared to attribute culpability to them. However, they did not portray themselves as feeling in control of the situation. This perceived lack

of control of a situation also seemed to arise when staff appraised themselves as unprepared for an incident. Their attributional style was the reverse of the former examples. These staff appeared to attribute the cause of the incident to the situation or the aggressor, and not to themselves however the feeling that they were not in control was the same. These accounts were all in the first person (*6,8,9,19,22,24*), barring one (1).

> *"...nobody has ever been spat at, it is the last thing you expect, you are aware if someone approaches you..."(8)*

The repercussions of these appraisals that portrayed the individual either as causing the incident or being unprepared for it appeared to leave staff feeling out of control in incidents of violence and aggression and with unresolved feelings of guilt and helplessness.

Feelings of being out of control and helpless could be suggested as not fitting well with the identity of an ambulance worker as a capable professional. It seemed that some staff appraised their role in an incident in a manner that meant that they felt emotion, but the emotion chosen was less threatening to their sense of safety. In this extract an interviewee describes his sense of anger at not being able to do his job as if the contract between him as the provider of care and the public as patient had been broken. His response is anger, but this may be to reduce the cognitive dissonance, because feeling angry is preferable to feeling helpless, like a patient.

> *"...because of the abuse you have not done your job properly...I feel very angry..."(7)*

Appraisals were also made by some staff in the third person (7, 22) about the reasons for their colleague's distress. They perceived their colleague's appraisals of their response to an incident caused them great distress. Incidents of violence and aggression shattered their colleague's view of themselves as the provider of care and made them feel like a helpless victim. This discrepancy between their felt sense and their perceived identity seemed to them to feel vulnerable and weak.

> *"...he perceived himself to be strong minded and strong physically...he saw himself as being weak because of the response he had to it..." (22)*

However, if staff analysed the incident of violence and felt that they dealt well it, as in the following example, the resulting emotions were felt and showed staff to be safe and in control.

> *"I had the upper hand...coped with it there and then and coped well in mind, within the letter of the law, that is a bonus...if you don't cope or fly off the handle there is the element that you have done something wrong..."(13)*

Summary of Analytical

The theme of an individual analytical style of thinking depicts the process of trying to understand aspects of an incident: the aggressor, the self as instigator, as victim or as professional. In each case the analysis of the particular aspect of the incident could be beneficial to the individual's sense of

safety by stopping their uncomfortable feelings about the incident, e.g. enabling them to see the reason behind aggression and not take it personally. However, there were as many instances of this analysis leaving difficult feelings unresolved and staff still feeling at risk.

Avoidant

This theme depicts a style of coping with violent and aggressive incidents that involved not thinking about or feeling the impact of the incident or perpetrator, but rather having a tough approach to it and its consequences. Although the term 'avoidant' can be seen in psychology as a negative strategy this form of coping was described by some of the interviewees as the only way to stay in the job. However, others noted that it might have had long-term negative consequences. All the descriptions that make up this theme come from first person accounts *(1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 16, 19, 20, 24)*. Many of the interviewees appeared to not dwell on the incident or allow it to affect them. This was achieved in a number of ways. Forgetting the incident was a common response (3, 4, 9, 16, 20).

> *"I've worked with people and they are still talking about it and I can't even recall that job, we've done 2 jobs since then..."(16)*

A strategy to facilitate this forgetting was to get straight back to work (1, 8, 24).

> *"It did affect me, but I did quickly resort to, that is something to cope with...I went out to the next job quickly..."(24)*

Another strategy that was described by two interviewees that facilitated avoiding thinking about the incident was drinking alcohol however, this was not portrayed as an ideal method of coping (12, 20). One interviewee noted that maybe the forgetting was not totally successful.

> *"I am old school I think about it, that was a bad job and could have done this...then I forget about it...but I do get to the point where I can't remember the colour of the car...maybe we do block it out"(4)*

Others described being able to withstand aggression and not be affected by it, this seemed to be facilitated by a level of desensitisation to the aggression (2, 4, 5, 6, 10, 19).

> *"...I laugh off verbal abuse it is to be expected..."(4)*

In response to appraisal of the aggressor some chose to dismiss them by being derogatory about them.

> *"I say what an ass hole he was..."(2)*

The attitudes and actions described here appeared to facilitate an avoidance of the incident so that it did not emotionally affect them (4, 7, 9). This seemed to be an important strategy for survival in the ambulance service.

> *"...you need to not take this job home...it is the only way not to sink..."(7)*

Summary of Avoidant

This style of coping appeared to be designed to regulate the emotional impact of the stressor (Frieze & Bookwala, 1996). The belief underpinning this strategy appeared to be one that favoured taking a macho or tough (Dick, 2000) stance in the face of a potentially emotive incident so that staff felt protected from the impact of the incident. The implication of taking this approach might be hypothesised to lead to particular styles of accessing social support and communicating about the incident. The different styles of communicating about the incident will be discussed below but the use of bravado and humour may have been more accepted than emotional expressions among those staff who used this avoidant style.

Collective Communication

Communicating about the assault seemed to be an important means of processing the incident and included a dialogue with others. The dialogue with others took many different styles and the style and outcome of the dialogue seemed to some extent to be dependent on who was speaking and who the audience was. Communication appeared to be about accessing different degrees of emotional support to provide a sense of safety. This sense of safety seemed to take different forms, for example feeling part of the group by using humour or debriefing and gaining perspective and reassurance.

Talking about the incident was only discussed in the first person and was viewed as the primary means of processing an incident. Regardless of how staff talked about the incident the importance of getting the story off their chest was repeatedly stressed.

"I need to get it off my chest, not to bottle it up, to let off steam..."(13)

Not talking about the incident was seen as worrying and unhealthy.

"if you can sit down and talk it helps...if you sit in silence and withdraw it would be bad..."(8)

Bravado/Tough talking *Who speaks, to whom* $\longrightarrow$ ***Function***

The quotes that make up this theme were in the first and third person *(3,9, 12, 16, 19)*. The third person accounts of tough styles of communicating showed the interviewees' interpretations of their colleagues' manner of talking about an incident. The first person accounts showed a pattern of hiding their distress and showing they were 'tough', both with crew mates;

" X and I never admitted to each other that we were scared...now we might do, he is retired now..."(19)

and with management

"...an officer coming down and saying do you want help is not useful...pride-wise you turn around and say I am fine..."(12).

This third person account by a manager is similar to the first person accounts. This manager felt that to report an incident was to officially communicate to management that that crewmember may have been affected by an incident and it was preferable to portray a tough image.

> *"...it is still a macho thing...even the women...they see it as being weak [to report an incident]..." (3)*

Bravado or tough talk was described in some of the third person accounts as the realm of the younger staff. Use of this style was portrayed as an indication of an early stage in the processing of the incident and in the experience of speaker. This differentiation in style of talking about an incident created a difference in status between the observer and the tough talker.

> *"the younger lads talk about it...first of all it is very much bravado, a glorified story...the women are good at giving them some feedback...they say 'oh no, I won't have that' but after 2 or 3 days you see the story becomes less glorified and it takes on a deeper meaning..."(9)*

A function of this tough style of talking was that it provided some kudos and display of personal strength to the author of the dangerous or gory story.

> *"...they will think this is a really big thing and some guy who has been on a few years will turn around and say 'so what I opened a Micra car door and the guy's brains fell out'...and suddenly people are thinking 'oh ,ok it's not so bad then'..."(9)*

This graphic description was in the third person but it was so precise i.e. 'Micra car' it suggested to me that it was likely this was a real example. The surface meaning of this statement was one of a helpful strategy, placing the incident in context. I found that although the interviewee had previously stated that talking with bravado was the realm of the 'younger lads' and was not to be respected, his description was shocking and detailed. I was left wondering whether the tough story was putting down others and served to boost his image of strength.

Bravado and tough talking appeared to cover up the speaker's distress and deny the distress of others. However, this third person account suggested that some staff could see through their colleagues and were ambivalent about the value of the graphic stories that were being told.

> *"...you'll get members of staff who have had violence against them and if you then say that happened to you they will say 'oh well I was alright just get over it'...it is bravado" (12)*

Humour/Black Humour ***Who speaks, to whom ⟶ Function***

The accounts of the use of humour included both first and third person descriptions and there were no marked differences between the two types of account *(1,6,7,9,10,11,15,16,17,18,19,22)*. Aspects of violent or aggressive incidents were viewed as amusing to some of the ambulance workers. There

were different thresholds for using humour depending on the severity of the incident and the individual involved.

> *"a crew came back from a job and the female was bottling it up and he was joking, making fun of the situation and she was really upset it wasn't relevant to her at all..."(15)*

This use of humour appeared to be a means of accessing a certain level of social support and as such served various positive functions: It seemed to undo or alter the memory of what had happened;

> *"within a group of people you turn an incident that is violent and aggressive into a funny experience, to portray yourself as a serial victim of violence..."(1)*

to provide a more helpful perspective on the incident;

> *"most things end up degenerating into a joke...you'll end up with stuff on your locker...that person sees the funny side, it gives perspective on it..."(16)*

and finally humour showed them as able to make light of things that 'normal' people would struggle to deal with, reinforcing the in-group identity as different and strong.

> *"the job has a macabre sense of humour...jokes in station would not be deemed acceptable outside..."(6)*

Despite the social support function of humour, there was the sense that anxiety about showing distressing feelings led to the use of humour as it was an acceptable means of showing they had been affected.

> *"we've laughed about something...it has been quite serious but it is a nervous way of dealing with it rather than sitting down and crying..."(11)*

Ordered recounting ***Who, to whom*** $\longrightarrow$ ***Function***

Ordered recounting was described in the first person and third person *(1, 7, 13, 22, 23)*. Re-telling the story of the incident in an ordered and systematic manner was done by a number of the ambulance workers and often occurred soon after the incident as this third person account describes.

> *"..she recounted circumstances, type of job, sequence of events.."(1)*

The function of this thorough recall was described in the following first person accounts. Firstly it appeared to help staff to make sense of the event by placing what might have been a busy, confused scene into some kind of order.

> *"...try to talk about what's gone on...to assimilate how things have gone, the order of events..."(1)*

Secondly it appeared important to inform themselves and others of what happened and reassure themselves they acted professionally.

> *"I like to...methodically go through it from beginning to end and say this is what I have done..."(22)*

Emotional Expression ***Who, to whom*** ⟶ ***Function***

Talking in an emotional manner about an incident of violence and aggression appeared to provide staff with social support (3, 7, 20, 22).

> *"...part of the support mechanism is your crew mate - you will talk it through" (20)*

However, being able to show the emotional impact of an incident and thus get the support appeared to depend on who was speaking and who was their audience.

Fellow ambulance workers were cited as a huge source of support and as a safe choice of audience in the first (2, 4, 5, 7, 8, 11, 12, 13, 15, 16, 17, 24) and third (2, 8) person accounts. The reasons given for why talking with fellow crew was safe were all in the first person, either in the form of a direct example or a more general personal view. Talking in an emotional way with colleagues was made possible by the perception that certain colleagues were non-judgmental and appeared to prioritise the state of the individual and not the job.

> *" ...it gives you the opportunity to speak out really honestly without being judged...your colleagues won't question you, 'what about the patient, what about the times and why didn't you get back to station?'"(22)*

This statement makes a conscious reference to the perceived style of response expected from management that would be focused on the job, not the individual. It might be hypothesised that seeking in-group support in the face of adversity distanced staff from the managers and transformed a negative stressor into group cohesion, reducing their distress (Tajfel & Turner, 1979).

Speaking with someone who had either been at the incident or who was a fellow ambulance worker who had experienced similar situations (2, 5, 7, 12, 13) also seemed to be safe because they felt that their experience would be understood and they would not have to explain themselves, unlike if they spoke with a "third party" (2).

> *"...generally they have suffered the same to whatever extent...there is an understanding..."(12)*

The social support that came from discussing an incident in an emotionally frank manner took two forms: Firstly some of the interviewees described how inter-colleague discussions gave a different and perhaps more helpful perspective on the incident (7, 9, 12, 22);

"...talking to the person who has been directly involved with the incident...they might have been looking at it from a different position to you...they have a different perspective...they can say really it was because of the illness or injury..."(12).

and secondly reassurance and learning seemed to be gained by talking through an incident with fellow crewmates who had shared similar experiences (1, 6, 7,9, 23, 24).

"...I had a chat with the guy I was on with and checked if I had done anything wrong...I need to know for the future..."(23)

For others discussion with their spouse served a similar function to discussion with their crew; it gave a different perspective on a situation (7, 13, 15, 18), but this time it was valued precisely because it was not from someone who had had similar experiences, but because they were lay people. All of the accounts regarding disclosure to a spouse were in the first person.

"...my wife is a good listener...she might look at a job from a different angle like a lay person's view...that gives you a wider spectrum rather than looking down a tunnel"(7)

The emotional content of their discussions was increased when talking with their spouse. This suggested that for some, it was acceptable to show the emotional aspect of their experience with their partners, but not to their crew.

"...with my wife I talked about how I felt and perhaps how scared I was...there's the professional side where you discuss it clinically and there is the softer side..."(13)

Restricted Emotional Expression ***Who, to whom*** ⟶ ***Function***

Despite the previous accounts of emotional discussions with crew being safe and providing support for some of the interviewees, both first (5, 12, 20) and third person (2, 4, 7, 9, 16, 19) accounts showed that showing their distress was not acceptable with *all* crewmates.

"...somebody might laugh you down in the middle of the station...you pick and choose what you say to certain people..."(5)

This third person account graphically highlights the appraisal of a crew member's illustration of distress. The joking tone of the story implied to me that taking time off was not due to genuine need and not something the interviewee took seriously or valued.

"Two crew members went into a house, 2 people had been shot dead in the house...and they didn't know if the attacker was still there, afterwards they were really affected...one went off sick at the time, but it was Christmas and he had a little one so not sure if it was more that..."(2)

The third person account of an experienced ambulance worker echoed this sense that showing you were troubled by an incident was a failing and again served to elevate his position in relation to this 'novice'.

> *"...as you get older you get rid of it quicker...the younger lads talk about it constantly, it is always on their minds..."(9)*

A time limit on talking about an incident appeared to dissuade staff from opening up to colleagues. This account merges the first and third person and it is not clear who he feels has set the time limit: with the general reference apparently outlining a relatively caring interpretation of his colleagues' reluctance to discuss his emotional state and the second line raising his concerns about continuing to discuss his distress with them.

> *"...people don't want to keep talking about it as they feel they are reopening a fresh wound...you don't want to be seen to be weak as you were assaulted 5 weeks ago..."(20)*

A final reason cited for not showing distress to your crew was the fear, in this case acknowledged as unlikely, of being seen as unreliable or incompetent in the job. This account again combines first and third person references. The account merges from third to first person and this shift may illustrate an increase in comfort with me and with exposing his fears.

> *"...if you are seen to be suffering with stress you are seen to be weak...you don't want to be labelled with the mad brush so people tend to hide it away...it is coming more that people are getting more open...but it is not the first thing you think of...it is not peer pressure it is your fear of how people view you, the reality is that people will be really supportive, but you think 'oh I am a poor paramedic, they will think I can't handle the job'..."(20)*

Along with the latter two accounts, I got the feeling with this throw away comment, that it may have felt a little risky talking emotionally with me for some of the interviewees.

> *"...you probably think we all need therapy..."(5)*

There were also times when distress was not made visible to the interviewees' spouse. These occurred when they felt that the lack of shared experience meant they would not provide empathy and support (12, 24). Two interviewees expressed this reluctance and both were first person accounts.

> *"...my husband has no conception of what I do at work...he would say 'well what is your problem'...he just wouldn't get it..."(12)*

Emotional discussions were also restricted with management. First and third person accounts both described concern over showing distress to managers *(1, 3, 4, 7, 12, 17, 19, 20, 22, 24).*

> *"With road staff you are doing the same job...you don't feel connected to the Ops supervisors...they would sit down with you, but they would go through the motions, it doesn't feel as comfortable than with colleagues..."(24)*

The use of the generic term 'you' is suggestive of a separation between the collective of the crew versus the management. In addition, some of the accounts about management included personal statements that appeared closer to a learned, cultural or group response rather than linked to a specific incident.

> *"...if you show signs of depression "you will be finished" so don't say...that is the general impression..."(13)*

The use of the term 'we' in the following account reinforces this collective sense of the crews versus the managers. The view being expressed suggests a belief that there is little room for staff to show their distress.

> *"...cos' of the situation with the managers there is a lot of promotion about how good things are, but we don't feel that and there is no place for our negative thoughts and negativity is frowned on...it's all singing and dancing..."(22)*

One interviewee described an actual incident but in the third person. He stressed that management did not support time off and therefore facilitate the expression of distress. I was left with a sense that management had given some staff the impression that they did not want to see their distress however it was expressed.

> *"...it was a minor assault and the crew member went home and when she came back she was interviewed and asked why she had been off...it wasn't disciplining but made her feel uncomfortable..."(1)*

This evident reluctance to discuss and show their distress to management was also demonstrated in the first person accounts of some of the interviewees that described their failure to officially report the incidents (2, 3, 19, 24). There was a concern that it made them vulnerable to management.

> *"...when they first started pushing reporting violence and aggression, a senior manager said 'I know the trouble makers in this service', cos' he saw certain crews coming up most of the time, he thought they were the problem..."(19)*

Not one interviewee stated they reported the incident to log the impact the incident had had on them. Rather many said they would only log it to support or protect others;

> *"...the only time I would fill in a form is if it happened to a crew mate I would do it then to back them up..."(24)*

or for legal protection;

> *"I have done to cover my own back...cos' of a counter claim..." (2).*

This reinforces the sense that there appears to be a danger for staff in making their distress or behaviour visible to the formal systems in case they are criticised.

There was a suggestion in three first person accounts by staff that the emotional expression of pain was less acceptable than showing physical pain (8, 12, 13).

"...that is the trouble with mental things people can't see how hurt you are...a physical injury affects other people...they know how to address a broken arm they don't know how to address mental injury..."(12)

There was also a sense from one ambulance worker that taking time off due to physical and mental distress was clear cut if you had been hurt or if you had had a 'bad job'. However, he was more hesitant about the acceptability of taking time off and therefore showing signs of emotional distress when it came to incidents of violence.

"...if you had a really bad job, say a child, you can take as long as you like and go home that is accepted and I am sure with the violence, I am sure no one is going to say go back to work..."(13)

The ultimate in restricted expression, was not sharing the incident with others at all. Two of the interviewees suggested in first person accounts, that they processed the incident alone and their distress about violence and aggression was not shared with others (17, 24).

"I didn't really talk to anyone about that, it was a personal thing..."(17)

Summary of Communication styles

This theme depicts how people communicated with one another about the incident. The manner in which they talked affected the level of emotional support that was accessed and was a marker for crew in-group identity (Tajfel & Turner, 1979). The more avoidant styles of communicating, bravado, humour and restricted emotional expression, were more about hiding distress, although it could also be hypothesized that talking in this manner allowed staff to keep their story alive without rejection from the group. The more restricted styles of communicating did appear to allow for some level of processing of the incident to occur. The emotional expression and to a lesser degree ordered recounting, were about accessing support, processing the incident and sharing the impact of an incident, but often only with particular individuals.

Table and Diagram Summaries

Figure 9 summarises the themes discussed above. Table 11 summarises a wide range of qualities that for some of the participants made them feel more or less at risk from incidents of violence and aggression. This table includes aspects of themes that have already been outlined above but have been brought together here to provide clarity of the comparative difference of the jobs that ambulance crews face.

Figure 9. Summary of Themes

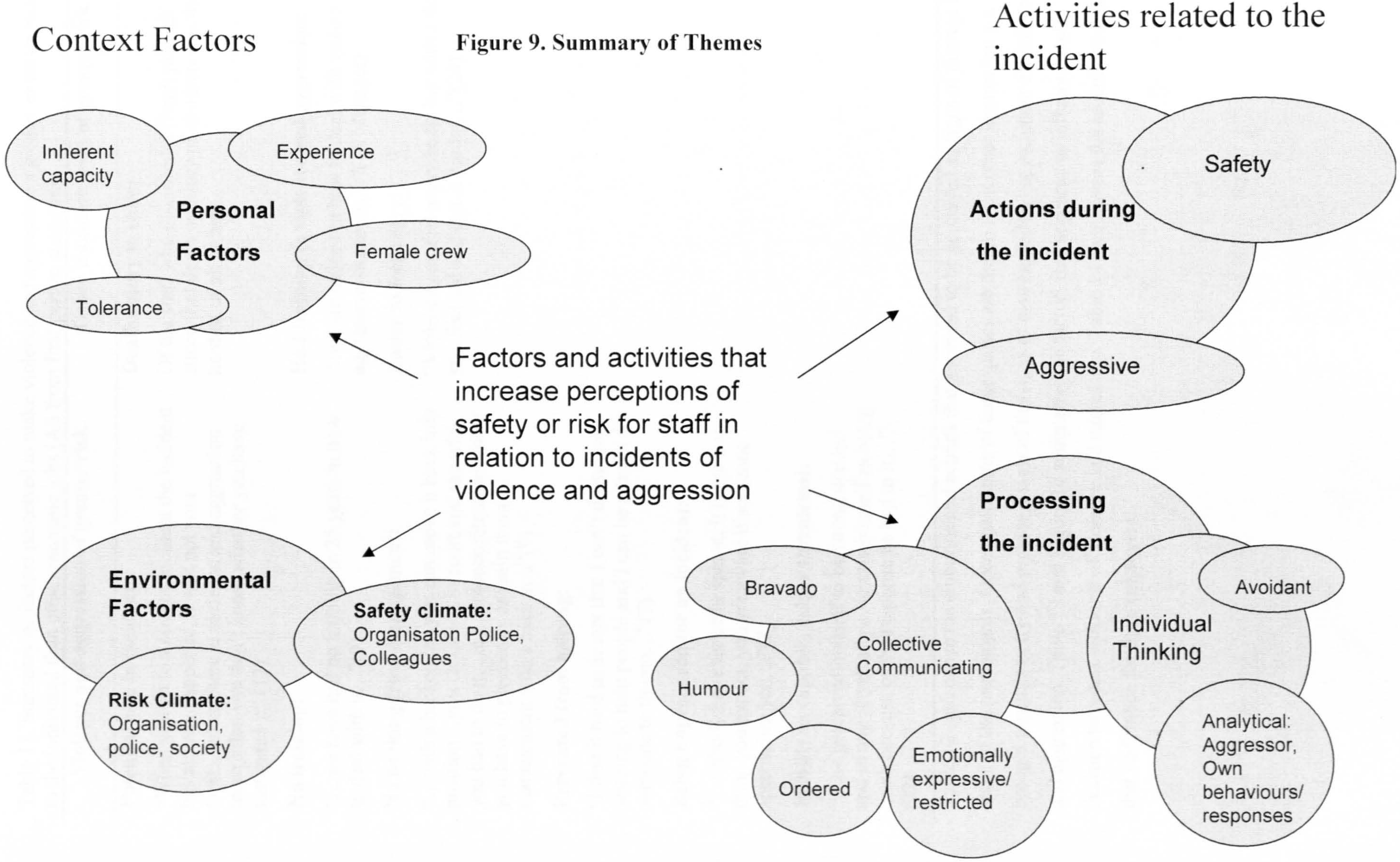


Table 11. Summary of factors perceived to make violence and aggression a greater or lesser risk to the individual than other traumatic jobs (All from first person accounts)

Violence and aggression of greater risk	Other traumatic jobs of greater risk
Potential role in incident: "When you go to a serious incident the incident has already happened, it was not your fault…when there is violence and aggression more often you don't know whether you have instigated it" (12)	**Death/injury to child:** Of the staff who discussed difficult jobs all stated that death or injury of children was the hardest of all to bear.
No training: "…we have had no training in 25 years in how to deal with it…"(9)	**Had training in violence and aggression:** "..we are trained in how to deal with violent and aggressive situations…"(18 Manager)
No backing from management: "…with a broken leg you can move it back into position…you can stand in court and say why you had to do it…in a violence situation where you have to physically restrain them…. management won't back you"(9)	**Easier to feel angry:** "Violence you feel angry back, but with a death you feel sad and that is harder…"(24)
Prevented from helping: "I find it hard to accept that I can't do my job, wanting to help people and I can be a target for someone to thump…"(7)	
Being unprepared for an incident: "…nobody has ever been spat at, it is the last thing you expect, you are aware if someone approaches you…"(8)	
Identity as capable, helper threatened: "…he perceived himself to be strong minded and strong physically…he saw himself as being weak because of the response he had to it…" (22)	

Table 12 summarise the emotions and actions that appeared to be perceived as signs of distress by some of the participants. Once again some of these quotes are drawn from other themes but are brought together to try and provide a view of the signs of distress following incidents of violence and aggression. Table 13 and Figure 10 summarise the factors that appeared to influence staff decision to report incidents of violence and aggression. Table 14 summarises the recommendations that staff made for their employers.

Table 12. Summary of actions and feelings perceived to indicate distress following incidents of violence and aggression

Symptoms	Quote
Poor Performance (14, 20,22) All third person accounts	"…their standard in their work drops.." (14)
Social Withdrawal First (12) and third person accounts (14, 22)	"…they shut themselves off from other people" (14)
Anger First (12) and third person accounts (14, 22)	"…an incident of violence and aggression can spark off a feeling of anger…" (12)

Table 14. Summary of Interviewee Recommendations to their Employers

Interviewee Recommendations
Improve reporting system (1, 22) "..ring a number…without having to go into incredible detail...filling in forms…I feel more accurate information would be recorded about what really goes on…"(1) "you need the opportunity to complete the document…getting back to station for a meal break is hard enough..." (1)
Training to deal violence and aggression (9, 14) "my biggest complaint is lack of training… there are no…"(9)
Feedback outcome of reported incident to staff "we need to make it high profile that management are following it up and need to report that to staff each month so they know that something will happen if they report it…"(6)
Reinstate informal time with crewmates "if you are on your own, you have nothing and you don't return to station, you don't see another member of staff…feel isolated particularly if you have been involved in an incident you have time to ponder…management really do have to address that" (12)
Improve quality of support follow-up (17, 20 , 22) **Management:** "you need a system that when you have an episode of violence you have a proper set up not just a letter …getting a letter really winds people up…the personal contact is crucial"(20) **Peers:** "the Primary Response Team [staff who] would recognise that it was a violent or traumatic incident & as one of your peers they would come and speak to you. They threw the carrot of getting people trained up & then never initiated it…it would have given you exactly what you needed it wasn't counseling but 20 minutes of time to get your head around it & direct you if you… needed it" (22) **Professional:** "a formal system…follow-up in a face-to-face way with someone who is an expert in the field" (20)

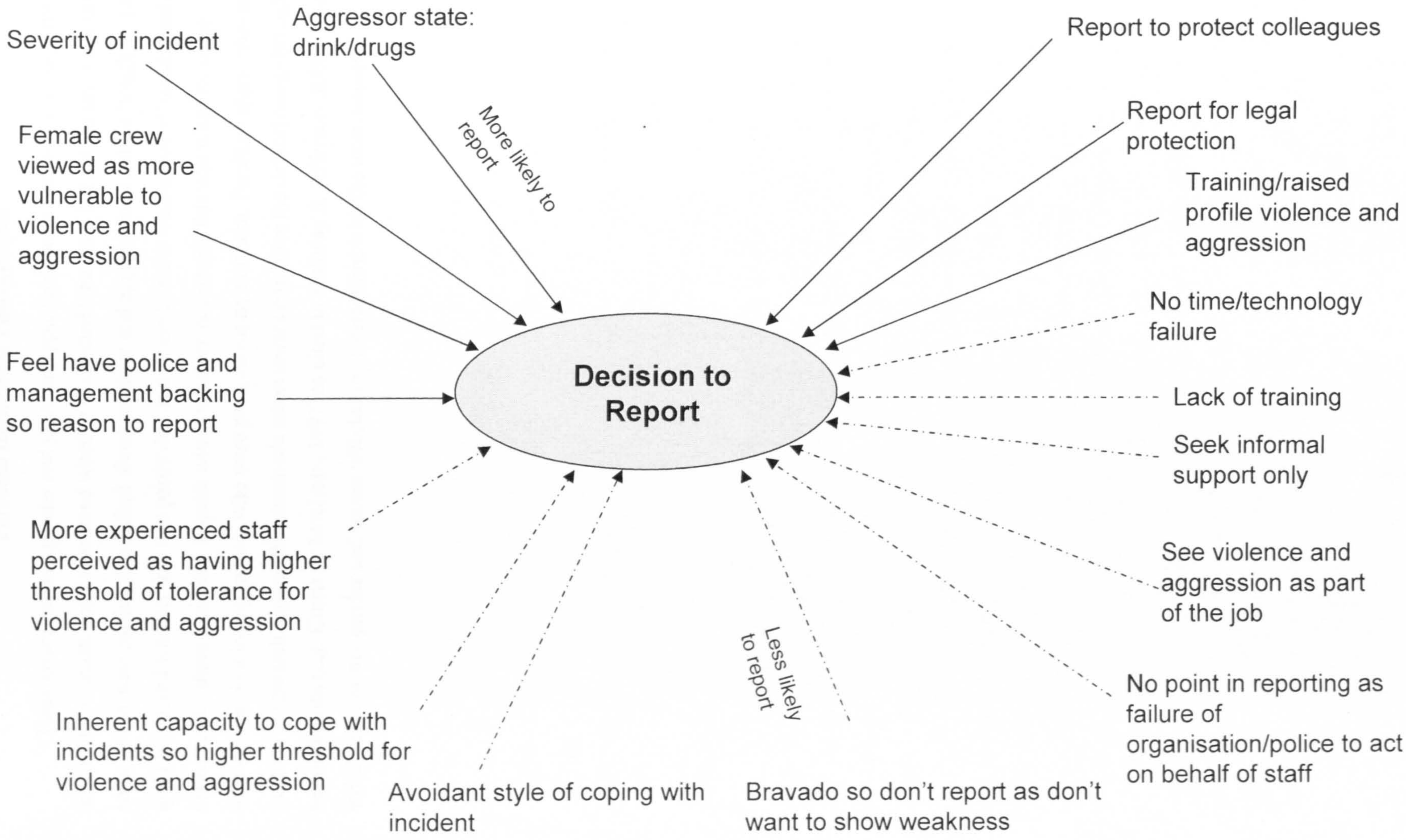
Table. 13 Summary of influences acting on staff decisions to report incidents of violence and aggression

Reasons for reporting incidents (2,7,20, 22, 24)		**Reasons for not reporting incidents (3, 4, 6, 14, 18, 19, 20, 22, 23, 24)**	
First person	Third person	First Person	Third Person
Protect self: "I have done to cover your own back…cos' could be a counter claim.." **[Climate: safety]** **Protect others**: "the paper work…hopefully you can get action so that it won't happen again…" **[Climate: safety]** **Profile raised**: "0 tolerance NHS campaign … the avoidance of v and a course… part of that course is about reporting it….those things in combination have raised the profile of reporting"	**[Thinking: Analytical]** **Aggressor state**: "…staff are more inclined to report it if it is drug or drink related…" **[Climate: safety]** **Legal**: "cos of the parliament bill coming in that it will be an offence to assault a health worker people are thinking it is more worth doing it…[reporting it]"	**[Incident: threatening]** **Severity of incident:** "unless it is really, really serious and I need to make people aware of the situation I don't log it to be honest…" **[Climate: risk]** **Lack training**: "I have never been shown how to officially log it…I wouldn't know…" **[Climate: risk]** **Disillusionment**: "I don't think we have a responsibility to log it once I have sent that email it will just be added to a statistic...there is a failing down the line as I feel this way and I am new and feel this" (24)	**[Communication /Avoidant]** **Sign weakness:** "biggest problem we have is they don't report it…it is still a macho thing...even the women…they see it as being weak…" **[Climate: risk]** **Danger report:** "if you show signs of depression 'you will be finished' so don't say….its the general impression" "people were frightened to report things they are classed as a grass and word gets round" **[Climate: risk]** **Mgt./Trust failure**: "management don't pursue it with the police as much as they should…this means people report it less…" "people don't report because when they do the trust makes no effort to prosecute them…there is little or no feedback once you report it" **[Climate: safety/Communication]** **Informal support:** "a physical push or prodding of a finger…a lot of us would just talk this over with a colleague and analyse and debrief yourself rather than take it any further which is not quite the right way…" **[Climate: risk]** **Technology/Time:** "it is technology…there are a lot of people who are not good at that sort of thing, it is dependent on getting on the one computer on station, on someone else not being there on it working… you might get in an hour after finishing and it's the last thing you want to do…"

Interpreted from data

Figure 10. Decision to Report

Direct reference in data



Personal Reflections Post-Analysis

I was aware that my gender and physical appearance were noticed by some of the male ambulance workers and I wondered whether it affected what they felt able to say. For example, some of the male participants talked about violence and aggression in quite a 'tough or macho' way and I wondered whether this was partly due to a desire to show me they were 'tough' and not distressed by these incidents. I speak with a southern accent and this was noted by some interviewees in a joking manor, who were predominantly northern. Feminist approaches to qualitative research suggest that same-sex interviewers minimize the defensiveness brought on by sex difference (e.g. Currie & MacLean, 1997, as cited in Hollway & Jefferson, 2000). I was wondered how my gender and accent affected my interactions with the interviewees.

Discussion Study 2

Introduction to section

This section will begin with a review of the results from the qualitative interviews in relation to the aims 1 and 2 of Study 2. Aim 3 and my findings will then be considered with reference to theoretical and research literature. The strengths and limitations of Study 2 will then be discussed and possible improvements and areas for future research will be outlined. The findings from Study 1 and 2 will then be considered together and conclusions will be made. The clinical, research and organisational recommendations will then be outlined. I will conclude with my personal reflections on the research process.

Study 2 Aims

The aims of Study 2 were to:

1) Explore the finding that there were no PTSD symptoms in the response set for Site 1.

2) Explore the possible reasons behind a low response rate and a low reporting rate of incidents of violence and aggression.

3) Further explore the responses of ambulance workers to incidents of violence and aggression at work.

Discussion of Aim 1

Seventeen of the 24 interviewees reported incidents either personally experienced (16 accounts) or experienced by colleagues (13 accounts). The remaining interviewees were able to refer to 'non-specific' incidents, the only exception being an experienced paramedic who worked in a rural station and had never witnessed or experienced violence and aggression. Five of the incidents were perceived by the interviewees to have had a sufficiently severe effect on the psychological, and in some cases physical, well-being of the staff member that they either left work or had to take time off. It is not possible to make this causal link, because four of the five were third person accounts, and all occurred sometime before the interviews. The list of examples of incidents of violence and aggression were not subjected to Thematic Analysis. I do not take a positivist stance and claim to have listed 'facts' that accurately reflect the number of incidents that staff had experienced (Mason, 2002). The interviewees' descriptions and my understanding of them will have impacted on what is presented. That is not to say that a true list of incidents of violence and aggression does not exist, rather it is to argue that descriptions of incidents can only be understood interpretatively (Mason, 2002). Bearing this stance in mind one can make the cautious conclusion that incidents of violence and aggression do occur and are *perceived* to have had some impact on the psychological and physical well-being of some staff. The extent of that impact could not be determined by this methodology. What was evident was that some staff showed signs of distress

that were perceived by themselves or their colleagues to have been linked to incidents of violence and aggression. These included: feelings of anger, guilt, fear and helpless; poor performance at work and withdrawing socially.

It was decided having gone through the analysis process that aim 1 was too ambitious for the method of data collection for Study 2. I would have had to have conducted clinical interviews following an incident of violence and aggression, 1 month post-incident (NICE Guidelines, 2005) for a clear picture of PTSD amongst this population. In addition, because I could not interview those individuals who filled out the questionnaires in Study 1, it is impossible to conclusively say whether or not they had symptoms of PTSD, but were not reporting these on the questionnaires (See 'Characteristics of the sample' section for further discussion of these issues).

Discussion of Aim 2

Despite the perceived impact that some incidents of violence and aggression had on some staff, there was the suggestion in many of the interviews that staff did not always officially report incidents of violence and aggression. This information was garnered from direct references in the data to influences on reporting as well as from my hypotheses about the data. For example, staff directly talked about a failure to report incidents because they did not have time to do so. They also described not showing the impact of an incident to managers and to some colleagues, leading to my hypothesis that they would be less likely to officially report such an incident. The accounts were in both the first and third person. Staff talked directly about their decisions to report incidents. Reporting was linked to protecting themselves or their colleagues and had been facilitated for some by the raised profile of the importance of reporting in the organisation and in training. Decisions not to report appeared for some to be related to practical as well as more interpersonal factors. Practically reporting was undermined by a perceived lack of time, limited availability of computers and knowledge of how to report. There was an active rejection of formal support because of a perception by some staff that no support would be given, as well as a fear of being seen as weak and adversely affected by the incident. Instead some staff reported using informal support networks. The literature describes a similar reluctance to report incidents to management. Alexander and Klein (2001), in their quantitative study of Scottish ambulance personnel, found concerns over career prospects served as a deterrent to seeking personal help. With reference to nurses and incidents of violence and aggression there is evidence that they generally feel unsupported by management in relation to workplace violence (Fisher et al. 1995, Dalphond et al. 2000, Jackson, Clare and Mannix, 2002) and some authors hypothesised that this could influence their decision to report violence and aggression in the workplace (Jackson et al., 2002).

At a deeper level of interpretation of the data it could be suggested that there were certain aspects of crew identity that meant that reporting an incident was more unlikely. The identity seemed to be about taking violence and aggression as part of the job, forgetting about incidents after

they have occurred, being inherently able to cope with anything, or through experience, becoming desensitised to such incidents. Much of the literature on the nursing profession concurs with an aspect of this interpretation that widespread under-reporting is linked with a belief that violence and aggression are part and parcel of the job (Erickson and Williams-Evans 2000, Taylor 2000).

Many of the interviewees did not report incidents using the official channels and this may have contributed to the low response rate for Study 1. This finding may go some way to explaining the lack of response when recruitment for Study 1 relied on official logging of the incident. It does not entirely explain the persistent low response-rate when questionnaires were available on station. The data collection on station may have led to fears of a lack of anonymity in relation to management and staff, despite my efforts to stress the confidentiality of the study. Fears of lack of anonymity and threats to job security have been hypothesised as a cause for low response rates in studies with similar populations (e.g. Clohessy & Ehlers, 1999). This may imply a skew in the self selecting sample of study 2.

Discussion of Aim 3

The third aim of this study was to explore the responses of ambulance workers to incidents of violence and aggression at work. What developed through Thematic Analysis of the data were Factors and Activities, described below, that increased perceptions of safety or risk for staff in relation to incidents of violence and aggression. In relation to the original aim, the responses of ambulance workers were to minimise their sense of risk in the face of such incidents. Safety and risk have both physical and psychological dimensions.

Context Factors

Context factors were associated with the individual's perceptions of their own and their colleague's risk status, as well as the influence that their working climate had on their safety. Various personal factors were perceived by some staff as influencing whether an incident of violence and aggression was an emotional and physical risk to themselves or to their colleagues. Being male, experienced, with a high tolerance of incidents of violence and aggression, either from experience or an inherent capacity, were portrayed by some as reducing the risk of such incidents. This sense of a reduction in risk seemed to arise from comparisons with others, for example male crew compared to female crew. The comparisons were primarily made in third person accounts, as interviewees were describing and commenting on others' capacities. Third person accounts in this context could be viewed as having merit as they shed light on interpersonal perceptions.

This process of comparison can be related to the theoretical base on Social Comparisons, in particular on downward social comparison (Wills, 1981). Social comparison theory suggests that downward comparisons often occur when an individual feels threatened in a particular domain and

chooses to compare themselves with someone they consider to be less skilled in that particular area (Beauregard & Dunning, 1998; Wills, 1981). Social comparison theory also relates to the function that these comparisons appeared to serve. The social comparison seemed to involve a particular aspect of an individual's identity that was made salient for the comparison, e.g. experience. This aspect of their identity appeared to be viewed as safer or at least better equipped to deal with violent incidents. Social Identity theory also appears to lend weight to the findings of the current study. The comparisons made by some crew appeared to create an in-group (Tajfel & Turner, 1979) that was aligned with various social power markers, i.e. being an experienced male (Cortina & Wasti, 2005). It has been shown that the salience of a particular social identity is a powerful determinant of whether a given stressor is seen as threatening (Lazarus & Folkman, 1984). Theorists have also argued that when an individual identifies with a group they interpret situations and stressors in relation to the perceived resources of their group as a whole, not just their own (Ashforth & Mael, 1989). This theoretical literature lends weight to the function of the social comparisons in this sample. Staff appeared to emphasise an in-group through social comparison that consisted of apparently 'tough' and resilient people perhaps to reinforce themselves with those strengths. Classic 'Stress Theory' posits that stress occurs when there is an imbalance between the environmental demand and the individual's resources to deal with them (Lazarus & Folkman, 1984). The qualities of the new in-group could render staff with a perception that they now have the skills to deal with incidents of violence and aggression.

Not all participants valued this resilient identity. Some staff referred to the negative aspects of experience (e.g. repeated exposure to incidents increasing fear of future situations) and of high tolerance levels. These contradictions appeared to suggest that there was another identity for ambulance crews, which viewed acknowledging the danger of a situation and one's limitations for dealing with it as an important aspect of staying safe. The Conservation of Resources theory (COR) (Hobfoll, 1989, 2002) adds to this view as it suggests that the community to which we belong influences which resources we value. It appears that there are at least two different communities, or at least value systems, at work in this population: One places value on being resilient and tolerating violence; the other on being aware of one's limitations. The latter view could contradict 'Stress Theory' (Lazarus & Folkman, 1984) because these staff appeared to acknowledge their resources were limited in some situations and this realisation did not automatically lead to stress.

Although there was ample theoretical literature that relates closely to my findings, there was much less research evidence. The only study found in this search was by Alexander and Klein (2001) in their study of Scottish ambulance workers. They suggested that the more experienced workforce were less likely to identify with feeling vulnerable in comparison to their less experienced colleagues. They based this claim on a lower reporting of mental health issues amongst

more experienced workers. They also stress that managers are less likely to look for distress and offer help to this group. They offer no reference or evidence for this assertion.

The social comparisons made in relation to gender were all by men in the third person about female capacity to deal with incidents of violence and aggression. The implication was that men were more able deal with violence and aggression than women. Because these discussions were in the third person they evidently did not reflect a full picture of female paramedic's coping abilities. No qualitative studies were found that explored female experiences of views on coping with violence and aggression at work. This topic has been explored in the quantitative literature, and the findings are mixed. For example, in Bennett, et al.'s (2004) large scale study (N = 617) looking at levels of mental health problems amongst UK ambulance workers, they found that men reported higher levels of PTSD measured on the PDS (Foa, 1995) than women. They suggest elsewhere that the disproportionate number of men to women in their sample may have biased this result, despite the ratio being common across the ambulance service (LaFlamme-Williams, Woollward, Bennett, Page & Hood, 2003). Laposa and Alden's (2003) study into Canadian ED personnel found no gender differences in PTSD symptoms in their sample, but again acknowledged the gender imbalance, this time with more women in their sample. Other studies failed to investigate whether there was a difference (e.g. Alexander & Klein, 2001).

Social comparisons appeared to occur throughout the Personal Factors theme. However, there were specific findings from the lower order themes that are worthy of comment as research evidence was found for other aspects of this theme. Quantitative studies found evidence for high levels of tolerance for violence and aggression in health care settings and this became accepted as part of the workplace culture (e.g. Jackson, Clare & Mannix, 2002; Erickson & Williams-Evans, 2000; Thomas, 1995; Scott, 1999). Qualitative research findings develop this further giving weight to possible reasons for displaying tolerance in the face of violence. Bryant-Davis (2005) describes the normalisation of violence as a protective strategy in instances of ongoing violence with childhood victims of violence. The perception of the self as 'at risk' was too debilitating for these children and this normalisation served to reduce the impact of the violence. Hafeez (2003) found that American emergency medical service personnel who were more accepting of violence were less likely to develop PTSD.

There were varied descriptions of the role of experience offered by the interviewees and there was a similar variability in the research literature. Contradictory findings were found in the quantitative studies in relation to the measured effects of experience on psychological well-being. The results of many studies were consistent with the 'sensitisation hypothesis', finding that length of service was predictive of work-related stress, burn-out and PTSD in ambulance workers (Alexander & Klein, 2001; Brough, 2005; Jonsson & Segesten, 2003) even when age was controlled for (Wastell, 2002). These findings are in line with the Ehlers and Clark (2000) model,

that portrays prior experience of trauma in terms of risk. The results of other studies may reflect a more positive effect from experience. These findings are more in line with the Assimilation model of therapy stages (Honos-Webb & Stiles, 2002). The final stage of this seven-stage model is described as 'Mastery', where the client successfully uses solutions from old problems to manage new situations. It could be argued that through experience in the ambulance service some employees are better equipped to deal with violence and aggression. Studies found a negative relationship between length of service, PTSD and other measures of psychological distress (Weiss, Marmar, Metzler & Ronfeldt, 1995), no relationship (Clohessy & Ehlers, 1999; Grevin, 1996; Laposa & Alden, 2003) or no relationship specifically in relation to workplace violence (Hafeez, 2003). Grevin (1996) suggested that, paramedics may share personality characteristics that predispose them to particular types of stress reaction, rather than the years of work-related trauma. Most of these studies were not based on UK samples and were primarily quantitative so comparison with my sample is limited.

Not only did ambulance workers describe their experience of violence and aggression in terms of personal factors, they also involved their perspectives on the impact that the context within which they and their colleagues work influenced their sense of safety. The literature provides support for this systemic stance when trying to understand workplace stress and trauma reactions (Regehr and Bober, 2005). Firth-Cozens (1992) calls for an understanding of the effects of workplace stress that acknowledges the subjective nature of the impact on each employee. Individuals do not act in a vacuum, rather they respond to a stressor in the context of their organisation and that organisation in turn operates within the wider society (Bonfenbrenner, 1979). Failure to take this approach is seen as overly simplistic (Firth-Cozens, 1992).

Dick (2000), in her qualitative study of the police force, makes a strong case for considering the impact an organisation's culture can have on the beliefs and attitudes of its workforce. She suggests that when recruits join the police force, they take on new identities and ways of thinking (Van Maanen, 1975, as cited in Dick, 2000). She criticises Ehlers and Clark's (2000) (detailed in Study 1) approach for its focus on individualised appraisals - the world is a dangerous place, for example - whereas she argues that these appraisals are located within, and influenced by, the wider organisational context. She argues that it is not just the presence of stressors that predict stress, but also the meanings individuals within the culture of an organisation and society attribute to those stressors. Those meanings are therefore socially constructed to some extent (Payne, Jabri & Pearson 1988; Myerson, 1994 as cited in Dick, 2000).

Quantitative studies have also highlighted the importance of staff perceptions in relation to the organisational context. Fiske (1995) found that staff perceptions and how they make sense of

their environment are more predictive of their behaviour and responses than 'independent factors' in the environment itself (Fiske, 1995). The importance of considering perceptions rather than 'independent factors' is shown in the interviews where staff suggested they could not be warned about risk areas. However, this is partially contradicted by a study into the London Ambulance Service where risk areas, although not individuals, were flagged to staff by Control (Nanura, et al., 2004). This could be down to a difference in regional policy however the discrepancy may highlight the perceived sense of vulnerability amongst staff. For managers it is this vulnerability felt by staff that needs addressing in addition to any policy changes that may be necessary.

Some of the interviewees described the aspects of their working environment that made them feel physically and emotionally safer and those aspects that made them feel more at risk. The accounts by the crew were primarily in the first person except when they discussed the failure of the organisation to act on behalf of them or when they perceived that it had undermined the informal support networks. In these instances the general term 'you' or 'we' was used perhaps to emphasise the collective of the crew in opposition to the undermining organisation. The third person accounts were primarily by managers, except when discussing their vulnerable position between the organisation and crew and between crew and the police. The influences acting on staff's sense of safety in their working environment included management and the organisation, their colleagues, the police and society. The overriding perception was that staff felt unprotected and relied on their colleagues' informal support for their emotional and physical safety. Despite this dominant story there were some who described support from the organisation and police. Interestingly, the dominant picture from the literature is of a presence of informal support and an absence formal support systems. The literature fails to show the multiple stories that have come from the current study.

Social or informal support is shown theoretically and in the research base to be an important factor in individual's responses to stress. The literature shows confirmatory evidence for the physical and emotional support offered by working in pairs, often over many years, amongst ambulance personnel (e.g. Regehr et al., 2002; Regehr & Bober, 2005). Mutual protection has also been found to reinforce a sense of identity that is akin to familial ties (Jonsson & Segesten, 2003).

In theoretical terms social coping where support is garnered from trusted others (Knapp et al., 1997) is vitally important in relation to coping with stressors. Social identity theorists argue that if people feel they are in a position of low status without individual options to change their position and feel they share a similar identify with others they are more likely to offer mutual social support. This sense of shared identity can buffer the effects of stressors (Levine, Cassidy, Brazier, & Reicher, 2002) and can overcome feelings of helplessness and desperation (Seligman, 1975). This

theory relates to the current study in that it was hypothesised that the feeling of insecurity from the organisation led staff to defend themselves and assert their identity as mutually supporting crew independent from, and in opposition to, a neglectful organisation. Similarly, COR theory (Hobfoll, 1989, 1998) suggests that stress is a consequence of a threat to psychological, e.g. social support, as well as physical resources. Stress resistance occurs when people actively use those resources in the face of a threat.

The perception of a predominantly poor level of support by the organisation and management, with one or two exceptions, has been found amongst ambulance services nationally and internationally (Alexander & Klein, 2001; Jonsson & Segesten, 2003; Regehr & Bober, 2005; Regehr et al., 2002), amongst Emergency Department staff (Laposa et al, 2003), nurses (Jackson et al., 2002) and the police (Kop et al.,1999). Specifically a poor level of training in how to deal with violence and aggression can be viewed as poor support from an organisation and it has also been reported in other studies, for example, Pozzi (1998). This American study was done a relatively long time ago and there may have been improvements and differences in levels of training internationally. The literature also points to evidence that poor levels of managerial support have adverse effects on the psychological health of healthcare workers (Regehr, Hemsworth, Leslie, Howe & Chau, 2004). It has been shown that good managerial support has protective qualities in the face of trauma in the workplace (Buunk & Verhoeven, 1991, as cited in Regehr & Bober, 2005). More specifically, organisational support in a healthcare setting has been found to moderate the effects of physical, vicarious and psychological aggression in relation to emotional well-being, somatic health and job-related affect. It did not affect fear of future violence or job neglect (Schat & Kelloway, 2003). Theoretically the importance of good managerial support has been stressed by Zohar (2000) who argues that a safe working climate will be felt by staff and supports this by findings that show a reduction in injuries and absenteeism in safe work climates.

The negative perceptions staff appeared to hold of their management and the organization are evidently not unique to this sample of ambulance workers. The literature provides various potential explanations for these predominantly negative views. One explanation might be that there is in fact a culture in the ambulance service of management and organisational policy not caring for their staff. Numerous studies that have reported poor managerial support have already been discussed and found significant associations with lower job satisfaction (Brough, 2005) and PTSD (Laflamme-Williams et al., 2005). There may also be other contributing factors that lead to such negative perceptions. Alexander and Klein (2001) hypothesised that Scottish paramedics may not be able to tolerate the sense of emotional vulnerability they experience in response to trauma and therefore blame the system instead. This process of displacement may be a defense used by the interviewees in my sample.

In relation to discussions around organisational support, the interviewees asserted their crew identity in relation to the frontline managers, rather than for example, their level of experience. The managers appeared to become the out-group in these discussions. Social identity theory supports this finding to some extent. It would suggest that these managers or high-status group would not develop a sense of shared identity and would act independently and fail to deal with stressors effectively and become callous or authoritarian (Haslam & Reicher, 2006). The current study could be viewed as supporting this hypothesis in that some of the crew perceived managers to be uncaring. However, the managers' perception of their actions was that they were concerned about their staff and aware of the stresses acting on the organisation. There was a sense from these managers that they were in a vulnerable no-mans-land between two warring camps. They had to implement policies they had not had a part in framing, and then were being criticised by their workers. Many of the managers said they felt they were not doing enough, but that they and their superiors were trying to improve things despite what the road crews believed. This position of frontline managers has been found to be associated with the highest levels of distress but lower levels of reporting amongst managers in the fire brigade (Regehr & Bober, 2005). The managers in my sample were the only group who failed to talk of themselves as victims of violence and aggression and exclusively described their workers' incidents. This may have been because they were reluctant to reveal their own distress or vulnerability following an incident of violence and aggression, or because they had not experienced a violent incident. The effects of failing to share distress after trauma have already been described and suggest that if this sub-section of the workforce do experience violent incidents they may require specific attention when considering the effects of the trauma.

The final area that was developed from the interviews was the description of inter-agency tensions between ambulance and police services. I could find no reference in the research literature that supported a view of the police as unsupportive and not recognizing that staff are affected by incidents violence and aggression. The only supporting reference comes from Dick's (2000) study of the police, who are described as having a 'macho culture'. It could be argued that if they subscribe to this macho view they would expect ambulance crew to tolerate violence and aggression, a view that was also held by some of the ambulance crew themselves.

Incident Related Factors

The discussion will now move on from the context factors to the themes more closely related to the incident. Incidents were processed at both an individual and collective level. Communicating about the incident with others seemed dependent on who was speaking and how safe the audience was. There was a clear preference for communicating with particular colleagues, and in some instances spouses, rather than with management. The purpose of communicating was to

increase the individual's sense of safety after a difficult incident and varied, for example, from asserting their collective identity using black humour, to getting reassurance about their actions. A variety of styles of communicating about incidents of violence and aggression were reported. Regardless of style, all of the 24 interviewees reported talking about incidents. This finding has been replicated in numerous qualitative and quantitative studies investigating ambulance workers (Brough, 2005; Jonsson & Segesten, 2003; Regehr et al., 2002; Alexander & Klein, 2001; Clohessy & Ehlers, 1999; Weiss et al., 1995) and other emergency service personnel (Hafeez, 2003; Fullerton, McCarroll, Ursano & Wright, 1992).

A failure to talk about an incident was seen as an unhealthy sign by many of the interviewees. The healthiest style for many, providing the audience was trustworthy, was talking in an emotionally expressive manner. The majority of the quotes for this theme were in the first person lending weight to this finding.

There is ample theoretical support for communicating about a stressful or traumatic incident to facilitate processing the incident. The Ehlers and Clark (2000) model for example highlights the protective capacity of ordered and emotionally congruent styles of communicating about a traumatic incident. Discussion with supportive others who can provide corrective feedback is identified as being the most protective action against developing PTSD. This is because it can facilitate placing the event in an autobiographical context, and can also encourage further discussion with others, including therapists. Moving from the Cognitive to the Psychoanalytical literature, Boothe, Von Wyl and Wepfer (1999) conceive of narratives as modeling mental events and social relationships. One function of a narrative is to gain control of anxiety and mental conflict. In a broader sense the COR theory (Hobfoll, 1989) detailed above and Knapp et al.'s (1997) typology of coping, point to the importance of mobilizing support and advice from trusted others in the face of trauma. The evidence base that is specifically about communicating following difficult incidents is in line with the theoretical benefits of communication as a means of coping.

Pennebaker and Beall (1986) discuss evidence for the negative impact of not talking or even writing about traumatic incident. They cite evidence for the impact on physical as well as psychological health, including high blood pressure and negative moods. Wastell (2002) found that a high use of emotional suppression was associated with an inability to identify and articulate emotions and high stress scores. Moulds and Bryant (2005) used a qualitative approach to analyse narratives before and after therapy to treat Acute Stress Disorder (ASD). They found the narratives became more ordered and emotionally congruent following the talking therapy and ASD symptoms reduced.

An important aspect of communicating about an incident was that it initiated different levels of social support to help process the event in the current study. There are mixed reports for

the beneficial effects of social support in research literature. For example, in some studies social support appeared to reduce the effects of trauma on emergency personnel (e.g. Fullerton et al., 1992) and conversely in other studies it had no impact at all (e.g. Brough, 2005). However, the general term social support is used in much of the literature and the quality of that support is not specified. Lowery & Stokes (2005) suggested that this focus of studies on the presence or lack of social support, rather than on the different styles of support, is insufficient. They found that dysfunctional peer support and a negative attitude to emotional expression led to higher rates of trauma-related stress. Good confiding support was necessary to prevent the students developing negative attitudes towards emotional expression.

Communication in this sample of ambulance personnel took different styles and appeared to offer different qualities of support. Humour and bravado/tough talking are both styles of communication that have been found elsewhere in research with other emergency personnel (e.g. Rosenberg, 1991; Dick, 2000; Regehr et al., 2002) and other victims of violence (e.g. Bryant-Davis, 2005). The function of this style of communicating as a means of making sense of the incident and reducing the effect of violence and aggression on the individual also finds support in the literature. Humour has been related to close interpersonal relationships and to stress reduction (Hampes, 2002). There is also evidence in the literature that lends support for the other side of humourous and tough talking described by some of the interviewees. Humour appeared to allow staff to avoid sharing their real feelings and to avoid acknowledging their colleagues' distress (Regehr et al., 2002). In terms of cognitive theories, such as Ehlers and Clark (2000) model, this style of talking could be understood as a safety behaviour. Trying not to talk about an incident, or talking in an unemotional way and missing out the aspects with high emotional content, could lead to discrepancies in recall and provide no opportunity to incorporate new information into the account, thus maintaining the here-and-now quality of the trauma narrative. Conversely the Freudian view of this defense is that it also allows some level of expression and this style of talking about an incident may provide a partial means of processing (Stafford-Clark, 1969).

The other important side to different styles of communicating appeared to be about communicating to form and affirm certain identities. The linking of communication and identity finds support both in the theoretical and research literature. Particular narratives are used with an audience that is perceived to be similar to the author. The author gains acceptance from that particular social group as they recognize themselves in the account (Boothe et al., 1999). The interviewees stressed the importance of speaking with crew as they were viewed as sharing similar experiences to them. The surface meaning was about being understood and understanding the situation better. An aspect of Social Comparison theory (Schachter, 1959) supports this meaning by suggesting that individuals who feel threatened will seek an audience who is perceived as similarly

threatened. The culmination of communicating about an incident with a similar audience appeared to increase crewmembers feelings of safety and of being part of a community.

One of the identities that appeared to be developed through talking in a humourous or tough/bravado style was about being unaffected and able to tolerate the incident. Dick (2000) found similar styles among the police and cites research into 'display rules', which include appropriate mannerisms, attitudes, and social rituals, which need to be conveyed for the individual to have the right to enact their role. Black humour in particular appeared to unite the ambulance workers in my sample, in contrast to an out-group of 'management' and 'normal' people (Tajfel & Turner, 1979), in turn increasing their sense of community and identity. Wanting to appear unaffected by incidents of violence and aggression seemed to prevent some of the participants from showing their true feelings to their crewmates. Similar fears have been shown amongst Canadian ambulance workers (Regehr et al., 2002) and police officers, whose core identity was associated with being operationally reliable and able to 'act tough' (Dick, 2000). There was a fear of talking to management and showing vulnerability because some of the interviewees thought they may be fired. This fear has been reported amongst other ambulance services (e.g. Alexander & Klein, 2001). Despite the numerous references to these more 'defensive styles' of communication, some of the interviewees suggested that bravado and humour were not appropriate for all and could be covering up deeper feelings.

Ample evidence for low levels of managerial support in general has already been documented above in discussion of the Context factors. However, the more specific finding that is not addressed in the research base was staff reluctance to speak about the emotional impact of an incident with management. This finding may point to the lack of specificity in the literature on defining formal support as much as a lack of research into this area.

The second way in which processing the incident was described was on an individual basis. The individual processing was portrayed in terms of an analysis of the aggressor's role in the incident and an individual's own actions and responses during and after the incident. The variant of this was an active avoidance of analyzing the incident. These different analyses seemed to relate to the level of emotional vulnerability as well as physical vulnerability that some staff felt. The Individual Processing theme was predominantly developed from first person accounts.

Appraisals of the meaning of personal responses during and after the incident appeared to result in some staff feeling guilt for contributing to the incident, feeling helpless or unprepared. These feelings appeared incompatible with an aspect of their identity as capable helpers. A sense of resolution from these feelings only occurred when staff felt they had not contributed to the incident or were in control of it.

There is support for the importance of the process of analysis of an incident and one's role in it, in both the theoretical and research literature. Ehlers and Clark (2000) describe negative appraisals of the trauma that include appraisals of how the victims felt they behaved during the incident. These appraisals can be associated with feelings of guilt and self-blame, resulting in long-term threats to their view of themselves. The Ehlers and Clark (2000) model is about PTSD, rather than distress or stress caused by an incident. I could find no other references to the issues associated with feeling culpable for an incident of violence and aggression against ambulance workers or other emergency personnel in the literature search conducted for this study.

Feeling helpless and unprepared appeared to result from appraisals of personal responses to an incident of violence and aggression. Zettl's (1999) psychodynamic approach to understanding the impact of trauma on emergency personnel adds further depth to this. She suggests that the role of emergency personnel provides them with 'psychological armor' that consists of control, helping, courage and protection. The critical incident punctures this armor, undermining their role and identity. Dick's (2000) qualitative study of police officers also supports this finding. She suggested that a lack of preparation for an assault was exacerbated by a culture that implied that they should be able to deal with unpredictable incidents. There were hints of such a culture amongst the ambulance personnel interviewed and it could be suggested that feeling unprepared was exacerbated by the culture of the service.

Analysis of the aggressor's actions predominantly resulted in a reduction in distress about the incident. However, the perceived state of the aggressor was important to staff's sense of emotional and physical threat. If staff perceived that the aggressor had some control over their own actions they were more of a threat. Attribution theory provides support for this finding. Hostile attributions about the aggressor are more likely if their behaviour is perceived to be intentional and controllable. If the aggressor is viewed in this way, the theory suggests that staff would also be more likely to make hostile attributions about them and feel anger towards them (Weiner, 1995). Irrespective of attribution theory, Biere (2000) makes another supportive argument for these findings. He notes that there is a crucial difference between being hit by a rock thrown by someone and a natural event of a rock falling on an individual. He argues that the personal and intentional nature of an attack can add to the emotional impact of an incident.

Clohessy & Ehlers (1999) point to literature on common coping strategies of emergency service personnel that also lends weight to the findings from this study. They highlight that trying to ascertain meaning from a traumatic incident can reduce the psychological impact of the event. There is evidence to show that trying to gain meaning from a traumatic experience or incident does not always result in psychological relief (e.g. Tomich & Helgeson, 2004). Studies have also shown that high levels of empathy with patients can lead to high levels of emotional distress (e.g. junior

house officers, Firth-Cozens, 1987). This evidence points to the multiple voices in the data from the current study. Namely that although some staff tried to make sense of their experiences, this did not always result in them feeling less distressed or less at risk from incidents of violence and aggression.

The theoretical and research evidence provides some support for the individual analysis of an incident. However, due to a lack of qualitative studies investigating health care and emergency personnel responses to difficult incidents at work, the specifics of the appraisals in relation to the individual and the aggressor are not addressed in the research base.

The avoidant approach focused on trying to forget about the traumatic incident, perhaps to protect staff from the difficult emotions associated with these incidents. For some this approach was viewed as the only way to cope with the job.

There is ample theoretical and research evidence to suggest that this style of coping aimed at reducing the threat of a traumatic incident will in fact lead to more psychological distress. For example, the Ehlers and Clark (2000) cognitive model of PTSD would describe 'forgetting' as a safety behaviour and as a negative response that occurs in reaction to re-experiencing symptoms or to talking or thinking about the incident. This 'forgetting' or suppression of memories about the incident prevents the elaboration and placing the trauma memory in context, thus maintaining PTSD symptoms. The Assimilation model of therapy paints a similarly negative picture. The first stage in the therapy model is 'unwanted thoughts' where the client prefers not to think about a problem (Honos-Webb & Stiles, 2002). In this sense 'forgetting' is considered problematic in the therapy process and needs to be moved away from for psychological health to improve. Both these models have not been developed to understand ambulance workers in a non-clinical setting and as such may offer limited support for this process.

The research base lends support for a negative impact from trying to forget a traumatic incident. This process has been found to be detrimental to social relationships of paramedics (e.g. Regehr et al., 2002). Thought suppression has also been associated with an increase in PTSD symptom severity amongst emergency service personnel (Laposa & Alden, 2003) and dissociation in response to memories of traumatic incidents has been associated with PTSD severity (Clohessy & Ehlers, 1999). Dempsey's (2002) study of African American childhood victims of violence, found that negative coping strategies such as avoidance of emotional thoughts about the incidents mediated the relationship between exposure to violence and psychological outcomes such as PTSD, anxiety and depression.

Despite the evidence base, it was suggested by many of the ambulance workers that this avoidant response to incidents of violence and aggression allowed them to keep working in the service. There is evidence to support this apparently functional side to avoidant coping. Grevin

(1996) found that denial was the only variable not associated with PTSD symptoms, suggesting this defense-mechanism may be adaptive in response to trauma. Janik (1992) (cited in, Grevin, 1996) also cites evidence for the use of certain defense strategies as adaptive for emergency personnel as they may allow them to perform under high stress and maintain professional objectivity. These authors point to the multiple ways of viewing this strategy that was also represented in the current study. The authors and the interviewees raised uncertainty about the long-term effects of 'denial' or blocking out memories and feelings about the event.

Research evidence and theoretical models support some of the findings from this study regarding avoidant approaches. However, the current study adds weight to the notion that this style can enable paramedics to stay in their job, that it may reinforce an important aspect of their identity as capable and should therefore not automatically be viewed as a negative coping strategy.

Finally, the participants discussed safety actions and aggressive actions taken during incidents of violence and aggression. The safety actions were predominantly talked about in first person accounts and portrayed as a positive sign that staff had coped well and reduced the threat. The aggressive actions were predominantly described in the third person, about less experienced crew who were seen to increase the risk in situations of violence and aggression.

No studies were found that discussed the impact of de-escalating behaviour, an aspect of safety behaviours, on the psychological health of ambulance workers. However, Clohessy and Ehlers (1999) in their quantitative study found that taking a professional attitude was described by many of the ambulance workers they studied and was unrelated to psychiatric symptoms. Bryant-Davis (2005) in her qualitative study into childhood victims of violence found that they used safety precautions which involved altering their behaviour to try and minimize the likelihood that another incident would occur. This behaviour developed in a context of ongoing threats of violence. Other than these examples, no other evidence was found to support or contradict the descriptions of safety actions taken by this sample of ambulance personnel.

Aggressive actions by apparently less experienced crew were also described by some of the participants. The accounts were all in the third person, barring one and so these accounts need to be taken with caution. I could find only minimal references to aggression by ambulance personnel in the evidence base. Regehr et al. (2002) interviewed a younger ambulance worker who carried a club for protection, but was "put straight" by a more experienced colleague. In Alexander and Klein's (2001) quantitative study they found that depersonalisation was a significant reaction to trauma amongst Scottish ambulance workers. The authors commented that depersonalisation can lead to a lack of concern and compassion towards the public, but not actual aggression. Laposa and Alden (2003) found a potential link between stress caused by interpersonal conflict in the workplace and PTSD symptoms amongst emergency personnel. Grevin (1996) hypothesised that paramedics

suffering from PTSD may show negative attitudes towards patients. Finally, Wastell (2002) investigated the use of emotional suppression amongst Australian ambulance workers but, while noting in the abstract that one consequence of this was 'acting out', provided no exploration of this in the study. I did however, find references to nurses being aggressive, but this was only with regards to bullying one another, rather than being aggressive towards patients (McMillan, 1995). The only clear references to aggression towards the public were amongst police officers (e.g. Kop et al., 1999).

I cannot conclusively say why there is minimal investigation and reporting of aggression by ambulance workers towards the public in the literature. One reason may be that researchers do not want to ask questions about aggression towards the public. This could be similar with research into nurses, who were only portrayed as aggressive to one another. The image of both these professions is focused on their care for the public something that is emphasized less regarding the police. It may also be due to a predominance of quantitative methodology that has to limit its focus and therefore is less likely to come across aggression amongst ambulance workers unless it is expressly investigated. Finally, the more experienced staff could have been exaggerating the case by using downward social comparison (Wills, 1981) to portray less experienced crew as out of control in violent situations and by default they were more in control.

Possible causes for aggression as a result of working in a high stress environment are explored in the theoretical and evidence base. One theory is that staff are demonstrating the process of enactment. This is where a person who has experienced violence against themselves internalizes the abusive or traumatic relationship experience and can go on to 'act out' violence against others, particularly if the setting is similar to the trauma they experienced. Van der Kolk (1985, as cited in De Zulueta, 1993) gives an example of a Vietnam veteran murdering his baby which he could not stop from crying because he re-experienced the sense of helplessness he had previously experienced during the murderous slaughter of his fellow soldiers. Hobfoll, Canetti-Nisim and Johnson (2006) investigated increased aggression and in-group, out-group distinctions by Jewish and Palestinians in response to continued threats of terrorism. They found that depression was related to reduced ethnic exclusionism. They hypothesised that this may reflect a distinction between the sensitizing nature of depression and the aggressive component of PTSD. This could suggest that aggression by ambulance staff maybe a symptom or a response to PTSD. However, both these examples are based on extreme violence situations and therefore their explanatory power for situations of violence and aggression amongst ambulance workers may only be limited to the most severe incidents. Kop et al. (1999) in their study of police officers describe a range of incident severity that police officers face. They found that officers who were experiencing 'Burn Out' were more likely to be aggressive towards the public. They defined 'Burn out' as resulting in a "negative, callous and cynical attitude towards citizens whom they [police officers] are supposed to protect and serve..." (Kop et al., 1999,

p.328). Aggression by the officers increased when they perceived the public as impersonal objects rather than people. The authors also hypothesised that if staff were emotionally exhausted they had less options and problem solving skills available in a conflict situation.

Methodological Considerations

Characteristics of the sample

The sample for Study 2 was self-selecting, and therefore inherently biased towards those people who felt confident enough to be seen by their colleagues and tutors to take part in an interview on the topic of violence and aggression. The sample was predominantly male, but this is in line with the gender distribution in the ambulance service so may in fact be representative. The sample was primarily made up of paramedics with some manager paramedics and only two technicians. As a result, the sample was dominated by more experienced personnel. There seemed to be a balance between rural and urban stations when mentioned in the interviews, but this data was not systematically collected so I cannot be certain how representative the sample was. The ambulance organisation was going through a period of change during the time that both Study 1 and 2 were taking place, with proposals for a merger with another service, a new pay scale and new computer systems. The questions for this study were 'general' (Elliott et al., 1998) and so the sample consisted of a range of genders, levels of experience and station setting. These factors limit the transferability of these findings. When comparing these findings with other studies it will be important to consider the details of the sample.

It is important to consider the relative comparability of the sample from Study 2 with those in Study 1 in relation to the aims of exploring the lack of symptoms, low response rate and low reporting of incidents. The sampling method for Study 1 included consecutive cases and self-selection. Like Study 2, the sample was similarly predominantly male. For reasons of confidentiality information was not collected on the location of the participants' stations, so I cannot comment on the representation of rural and urban participants. Not surprisingly it appeared that the two samples had similar demographics. Staff in Study 1 who declined to take part either had to be brave enough to say so to the CAMs, or not return the questionnaires. It was therefore, perhaps slightly harder to decline to take part in Study 1 than Study 2. Unlike the interviewees, the participants in Study 1 had just experienced or witnessed an incident of violence and aggression, whereas the interviewees may not have experienced a recent event.

Strengths and Limitations

Strengths: Method

Respect for the participants (Elliott et al., 1999) was ensured using the following ethical considerations. The recruitment process included Participant Information Sheets given to all potential interviewees. This sheet included information on the purposes of the study; one of the purposes was that the findings of the study would be fed back to the senior management of Site 1. Written consent was gained and the interviewees were free to withdraw this consent without giving a reason.

The interview schedule was trialed with a colleague on the clinical training to ensure clarity of the questions. Thematic Analysis (TA) also allows the researcher to adjust the interview questions and to add to them in response to the interviewees, reducing the need for a pilot study if time is short.

Ethical constraints meant that I offered interviewees the option of talking about their colleagues' experiences, their own experiences or both. This method gave me an insight into how interviewees viewed their colleagues' responses and thereby hinted at the cultural context of the individual's responses to violence and aggression. This could have led to confusion over who was author of the account and who was the subjective, however I rectified this by specifying whether the account was spoken in the third or first person.

It was evident that one or two of the participants had a particular story to tell me which could indicate that they told me what was important to them and were not restricted by the research questions:

The methodology, process of analysis, and my theoretical and personal orientations have been detailed to facilitate: transparency of the study; quality checks of the process; and to allow the reader to understand my interpretations and generate alternative ones (Elliott et al., 1999). The sample and setting has been clearly described to allow the reader to consider the generalisability of my findings (Elliott et al., 1999).

Analysis

A section of the interview text was 'quality checked' by a fellow trainee to see if their codes matched mine (Elliott et al., 1999). Where any discrepancies occurred points were clarified by discussion. Where possible the data has been grounded in examples to provide an illustration of the analysis, to allow an appraisal of the fit between the data and my understanding of it, and provide an opportunity for alternative interpretations to be made (Elliott et al., 1999).

Findings

My study supports Dick's (2000) finding that the cultural context within which emergency service personnel work impacts their appraisals. Dick's (2000) evidence for a macho or tough culture is also supported by my findings and provides evidence for a common, but often unfounded, assertion in the literature on emergency personnel. My study has also drawn attention to aggression by ambulance workers, something not elaborated on in the current research base however the accounts of this were all in the third person.

Limitations: **Method**

Due to ethical constrains I could not interview those individuals who filled out the questionnaires in Study 1. Therefore it was impossible to conclusively say whether they had symptoms of PTSD but were not reporting this on the questionnaires.

Information was given on the purpose of the study. One of the purposes was that the findings would be fed back to the senior management of Site 1. This information, though ethically important to relay to the potential interviewees, may have led to some stressing the negative aspects of the management and organisational policies, leading to some bias in the responses. Participants may also have been guarded about their criticisms in case they were found out. It was also evident that one or two of the participants had a particular story to tell me and as such were less focused on the interview questions than others.

Semi-structured interviews, unlike narrative approaches, tend to be more centred on the interviewer's choices, and this is evident as I selected the topic for discussion, ordered the questions, and worded them in my language leading to an inherent, but inevitable power imbalance and bias in the data (Bauer, 1996, as cited in Hollway & Jefferson, 2000). However, due to the time constraints, it was felt that some level of structure was necessary and given the focus of the research aims possibly beneficial.

The interviews themselves varied in length from 15 to 40 minutes. As a result, some of the scripts were richer than others. This variability in depth was balanced by the breadth of discussions from interviews with 24 participants. The literature is inconclusive on whether larger sampling causes confusion in the researcher and 'thin data', or if it can enable category saturation and a broader understanding of the topic under discussion (Miles & Huberman, 1994; McCracken, 1988). Regardless of which stance one takes it is evident that the limited amount of time available would have meant that the interviewees possibly found it harder to trust me in a 15 minute interview, rather than a 2 hour one, and were therefore less likely to have provided me with as much personal detail.

The interviews were based on the stories of the interviewees, not observed behaviour. There is an inevitable limitation of the gap between what people say and do (Hollway & Jefferson, 2000). In addition, due to ethical reasons the interviewees were able to describe experiences about themselves or their colleagues. This meant that a confound was present as it was not immediately

clear who was the author of the account. To rectify this I specified who was speaking when quotes were provided in the Results and summarised the proportion of the first and third person accounts within each theme. This method may have led to more generalisations and fewer accounts grounded in specific, personal examples (Elliott et al, 1999).

As the interviewer and researcher I was aware that I had a vested interest in particular aspects of the participant's stories and although I tried to let them lead the interview it is likely that I will have shown more interest in comments made about the research area than other issues.

The study was cross-sectional and retrospective. This meant that it was not possible to fully consider the process links between the themes, although some attempts were made when the data permitted it.

Because the interviews were not systematically related to a specific, recent incident, generalisations and recall bias were more likely. In addition, it may have been more likely to get opinions offered that were not based on actual examples and may have been a defensive style to reduce anxiety (Hollway & Jefferson, 2000). This also meant that aim 1 could not be explored as identification of PTSD symptoms would have required a clinical interview one month post an incident.

Analysis

The process of data analysis was restricted by the lack of time. I have carried out two clear stages of analysis but feel that the iterative process could continue. I consider the current analysis the second stage of a further process of analysis that could be carried out in the future.

I was aware that some of the interviewees' quotes featured more frequently within the Results section than others. This was due to some being more eloquent and their quotes typifying the particular theme most succinctly. This means that some participants' 'voices' are heard more clearly than others.

Improvements

Data on the location of the interviewees' ambulance station should be systematically collected. The levels of violence and aggression appear to be higher amongst the city crews and this could either lead them to be more prone to feeling at risk or may lead to them expecting it and becoming desensitized or more tolerant of it. Information on the take up of training and choice of courses offered at each station would also be of use to understand the discrepancy in views on training.

It would be of interest to consider the cost and benefits of telling potential interviewees that the results would be fed back to management prior to interviews. This could be rectified by not feeding back the findings to management. However, this would not have been possible at Site 1, and it is questionable if this would be as helpful to the participants and their organisation. Research should have a practical as well as theoretical impact and it is important for researchers to attempt to

balance these two demands where possible. A better solution may be to interview the participants and ask after the interview whether they would like the themes from their interview to be anonymously fed back to management, or to reassure participants by defining more clearly what might be fed back.

To reduce anxiety over disclosures a more detailed scenario could be developed and participants asked to talk, either to me or to a fellow ambulance worker about their experiences on this topic (e.g. Doherty & Anderson, 2004). This also carries a disadvantage in that the personal nature of the accounts maybe lost.

Staff could be interviewed before an incident of violence and aggression and again after one month to understand the processes of their responses to the incident and if a structured clinical interview was used one could see if PTSD symptoms occur. This would facilitate exploration of Aim 1 and a more detailed model which could include a more sophisticated analysis of the process links between the themes, as favoured by Grounded Theory, than was possible with this thesis (Willig, 2001). Ethics permitting, this would allow the interview to be grounded in a specific example and guard against generalisations. Second, or even third, interviews allow the researcher to test emergent hypotheses and they can give the interviewees time to reflect (Hollway & Jefferson, 2000).

The interviews could be longer and conducted with fewer staff. A longer interview time may reduce the use of defensive, cliché statements or at least would have allowed me more time to explore the feelings behind these types of statements. The reason that longer interviews were not conducted in this study would need to be addressed, i.e. that ambulance staff have very little free time whilst at work, would need to be addressed. This could be rectified if staff were given time off to take part in the interviews or paid to take part on their days off. Payment has been used in other studies with this population (e.g. Regehr et al., 2002), but payment of participants can bias who then chooses to take part.

This research would benefit from ethnographic observations of staff responses to violence and aggression and the ways in which they interact with one another, management, and the public. This would add another layer to the analysis and facilitate the exploration of the inevitable problem of identifying the difference between what people say and what they do.

Quality checks could be improved by using triangulation (Elliott et al., 1999). With ethical permission, quantitative research with victims of violence and aggression could be used and a sub-section of that sample interviewed. A Canadian study has been carried out using this mixed methodology and its findings could be tested (Regehr et al., 2004)

These suggestions for improvements could be facilitated by a co-researcher. Although discussion with others was used to develop this study, a co-researcher would enable cross checking

of the entire process of coding, not just a section of text, and therefore improve the validity of interpretations.

Future Research

Researchers need to consider the effects of less dramatic incidents on emergency service personnel and include the apparently mundane, but repeated exposure to trauma. The evidence is inconclusive regarding the effects of years of exposure to trauma so researchers should not assume that it is inevitably detrimental.

The targeted sample was ambulance personnel but it would be useful to obtain peripheral samples to provide more information, contrasting and comparative information, and to broaden our understanding of the topic (Miles & Huberman, 1994). Family and friends of ambulance personnel could be considered, to explore the impact violence and aggression has on their relationships with the ambulance worker and how the ambulance worker then responds to the incident. It would be of interest to interview hospital staff from Site 2 to consider their responses to violence and aggression and repeat the current qualitative study to see if there are any similarities or differences in the two groups' responses. It would be particularly interesting to interview ex-ambulance workers, or those on sick-leave, to consider if there is any difference in the responses to violence and aggression with those who stay in the service.

Downward social comparison (Wills, 1981) appeared to be used by various interviewees. It would be interesting to further investigate what function these beliefs serve and whether other samples use the same strategy to the same extent.

The description of aggression by ambulance workers is another area that prompts further investigation. The participants highlighted this as a problem within their colleagues and barring one, no one stated that they had engaged in aggressive behaviour themselves. Firstly it would be important to gain first person accounts, if they exist, of these instances. This is of particular interest because within the limits of the literature search for this study there was only brief reference made to ambulance workers being aggressive themselves and no studies expressly researched this area.

The organizational culture of the ambulance service could become the focus of future research to develop our understanding of its effects on staff abilities and styles of dealing with trauma.

Researchers need to consider the quality of the social support being provided and who is providing it and not just look for its presence of lack of it. Social support in an unsupportive working environment may take on different forms than social support in a supportive organisational setting. With reference to ambulance workers the term 'social support' appeared to be broader than family or friends, including work colleagues, the organisation worked for, and related emergency services.

Implications and Recommendations

It appeared from the interviews that ambulance personnel from this sample and their colleagues experienced incidents of violence and aggression and some appeared to be emotionally and physically affected by them. It was also appeared that despite the impact of violence and aggression very few described reporting these incidents. Although one cannot claim that these findings represent an accurate picture of the amount of violence and aggression it is important to consider the implications that the interviewees' perceptions have for the organisation and in a clinical context.

Clinical

Organisational changes that result in a more supportive environment for staff to report the effects of violence and aggression could have a significant impact on the likelihood of staff seeking professional help. If staff were encouraged to report their distress in a supportive environment they would be more likely to feel safe talking about their distress and seeking professional help. Such help could be further facilitated if psychologists and counsellors were provided in-house and were accessible at short notice (Regehr et al., 2004) or if staff could reliably attend out-patient appointments.

The vital role that organisational policy and culture play in the wellbeing of staff means that any clinical intervention should consider these systemic issues. Long-term change will only occur if there is intervention at the organizational level and not just at the level of the individual (Regehr and Bober, 2005).

Aggression by ambulance workers is an area that is important to consider when working clinically with this group. It appears that it is something that is hard to admit personally, and perhaps hard for others to discuss openly, as it runs contrary to the view of a caring, helping profession. For this reason it is important for clinicians and managers to consider naming aggression as a possible response to violence and aggression at work, and make it a legitimate theme to discuss. In turn, clinicians should not assume that repeated exposure to trauma is inevitably detrimental to ambulance staff.

If a diagnosis is made of PTSD in an ambulance worker following an incident of violence and aggression and the NICE guidelines (2005) are followed and CBT used, certain factors need to be considered. For example, if the Ehlers and Clark (2000) cognitive model is used, the clinician needs to consider the gaps in the model. These include the following: Systemic influences on individual interpretations and responses to violence and aggression; additional 'background characteristics' that might influence the individual's response to trauma, for example, gender and variations in responses to previous trauma; and the functional as well as maladaptive aspects of cognitive and behavioural strategies such as safety behaviours. In addition, it would be important to consider the protective appraisals that staff make about the incidents.

Organisational

Frontline managers appeared to be in a unique and difficult situation. They appeared not to confide in the road crews, and had to implement policies that they had not developed. They still had paramedic duties and faced similar stresses, but did not share their own experiences with me during the interviews. The literature suggests that this sub-section of the workforce are less likely to share their distress and more likely to suffer distress as a result. This suggests that frontline managers may require specific focus from employers when considering the effects of trauma and require a more tailored means of seeking help. They may require more time with their crews to do a better job of supporting them and be encouraged to openly seek help and model help-seeking behaviour.

Low reporting of incidents of violence and aggression means that the organisation cannot get an accurate picture of the incidents that their staff face and therefore will have little hope of reducing the number of incidents. It will be important to take measures to improve reporting rates so that the organisation can audit the risk areas and types of incidents to improve the preparation and protection of their staff (Nanuwa, et al., 2004).

Low reporting appears to be caused by a number of factors that the organisation can rectify and these are summarised in Table 13 and Diagram 2. The culture of minimal reporting of incidents could be facilitated by modelling by key staff like union representatives and managers.

These organisational changes would have a greater impact if the law were changed so that it was also an offence to assault ambulance workers, not only police officers. This could lead to more successful prosecutions and increase staff motivation to officially report incidents. This is beyond the realm of the organisation, but it is a change that could be lobbied for, and this would indicate solidarity with their staff.

The psychological wellbeing of staff would be prioritised by providing high levels of professional help and facilitating the safe reporting of incidents. The perception of the level of support from management should increase and this has been shown to be protective (Buunk & Verhoeven, 1991, as cited in Regehr & Bober, 2005).

One of the major difficulties that management faces is gauging whether a reported incident would have caused the victim distress and therefore whether they need support. It was evident that levels of violence that were tolerated were determined by more than the objective severity of the incident. Any reporting system has to include space for subjective perceptions of the distress caused and not rely on a crude cut-off that offers help for multiple fatalities but not for an incident of verbal abuse.

Providing information on professional sources of support is crucial but it will also be important to facilitate the informal and vital support network between colleagues. Current policies of working alone and quick response times are undermining this informal system and this could be catastrophic for the well-being of ambulance workers. Re-instating colleague-led programs such as the 'Primary

Response Team' will project a message that management prioritise colleague support and value the skills of the crews to support one another. However, acknowledgement by management of their failing to follow through with this project and an understanding of the impact that this failure would have had on staff is also crucial. Good informal support was suggested by some of the interviewees as time-limited and informal support should not make management complacent about providing formal support services.

Years of exposure to violence and aggression does not appear to have a predictable relationship with the levels of vulnerability felt. Organisations should not assume that more experienced staff are better off.

Changes in training should take place and could result in improvements in the psychological wellbeing of the individual as well as their functioning at work. Being prepared for violence and aggression to occur, how to respond if it does, and how to deal with it afterwards, were highlighted as key protective factors for the interviewees. Staff training could include the possible reasons for the public becoming aggressive, highlighting that it is often not a personal attack. Staff could be trained in ways to defuse situations and learn from their tutors and one another's experiences. Staff could also be educated about the likelihood of getting flashbacks, that they are not an indication of them going 'mad' and again draw on one another's experiences of them. This could lead to an 'educational desensitisation' to violence and aggression as well as to gory scenes (Palmer, 1983, cited in, Clohessy & Ehlers, 1999). The training could also encourage seeking help and give information about the different sources available. Having a respected member of staff talk about their own experience of seeking help could go some way to modelling a new way of reacting to violence and aggression, and prompt a shift in the current culture. Finally, an open discussion and psycho-education on aggression in ambulance workers and the possible causes of it and where help is available should be done. This training should be carried out in a non-blaming manner to facilitate alternative ways of dealing with attacks.

Conclusion

The findings from study 2 partially address the questions posed by study 1. The interviewees described distress in themselves and their colleagues following incidents of violence and aggression. However, the interview method did not permit me to gather evidence that would support PTSD symptoms in this sample of paramedics. The practice of not reporting incidents of violence and aggression appeared to be common and the reasons were both practical but also emotional.

There was some crossover between the two studies in the areas of low use of official support services and minimal court proceedings following incidents of violence and aggression. Both studies found that self-blame and seeing the world or 'society' as threatening were cognitions

experienced by ambulance workers following incidents of violence and aggression. However, these similarities do not increase the transferability of these findings as they are both drawn from a small sample and from one ambulance service. Although I have considered how representative my sample
may be of others and how my findings fit with other studies.

Throughout the Results and Discussion sections I have worked to break down the components of how staff responded to incidents of violence and aggression. However, as Lazarus, (2000) stresses it is also important to reconstruct the whole process of coping. The themes from the qualitative analysis portrayed a varied picture of factors that increased perceptions of safety or risk for staff in response to incidents of violence and aggression. The factors were interrelated and acted at the individual, group, inter-group and organisational level. Social comparison appeared to be used predominantly by crew, but also by management to defend against feeling at risk and for some to assert a particular identity. Two identities were asserted: One identity was tough, tolerant and capable; the other was more aware of personal limits and of the need for informal and formal support. The respective identities appeared to relate to how staff acted and processed incidents of violence and aggression. The importance of formal and informal support was made very clear through these identities and highlighted a need for existing informal networks to be supported and formal networks to be developed so that staff feel protected by the organisation.

These findings were considered in relation to the theoretical and research evidence base. The findings from this study add to the current literature base by focusing on violence and aggression as an issue for ambulance workers, rather than the dominant focus on disasters or gory incidents. The findings further the research base by exploring and prioritising aggression by ambulance workers, not just by the public. Evidence for the presence of two apparently opposite identities co-existing in the ambulance service has not been described elsewhere. Feelings of guilt and culpability were associated with instances of violence and aggression and were highlighted in this sample of ambulance workers as a key source of distress. This is an area that was not covered in the literature and appears to be an important focus for future research.

Research and clinical practice with healthcare workers who have experienced violence and aggression at work needs to take into account the individual's response within the context of their social relationships and the organisational setting. The NHS needs to consider the impact that a supportive organisational culture could have on the psychological health of their employees and ultimately on the care our patients receive.

Personal reflections

The experience of carrying out this research has had a profound effect on me professionally and personally. Although I started out as a researcher with a clinical interest in violence and aggression against ambulance workers, I now feel more of an advocate, not just an interpreter of the stresses they face. This shift started when I visited the stations and discussed the issues facing staff, but grew when I was able to interview them and consider their situation in depth through qualitative analysis.

Carrying out a mixed methodology study has at times led to conflicting feelings and challenged my beliefs. I have struggled with the clash of the two paradigms, one where a universal truth is sought and the other where universal truth is not believed to exist. This tension however has led me to recognize the value of each in achieving certain ends, but neither is a panacea. I felt that by engaging with my participants I learnt so much more about their lived experience than I could have done with the use of questionnaires alone, and as a clinician this has been most appealing and fascinating.

The experience of carrying out a research interview and not a clinical one has felt challenging at times. As a trainee therapist I have become used to hearing distressing information, staying with that and supporting the client to find some resolution to their distress. As a researcher I had to just hear these stories that were at times chilling, and hold onto them. This experience has made me realise that the process of therapy is not only cathartic for the client but also for the therapist. Not only do I get to share in the change in the client but also have a space in supervision to debrief and reflect on what I have heard. This was not the case with these research interviews and I had to use my own internal resources to process what I had heard. Although this has been hard at times, the difficult times gave me some small insight into what it must be like to face traumatic scenes and experiences that frequently do not have any resolution.

My view of responses to violence and aggression has widened from a legitimate, but nevertheless, narrow focus on one cognitive model, to the rich and varied tapestry of behaviours, ideas and beliefs woven by my interviewees. This breadth has reminded me of the importance to consider my clients in the context of their lives, not only in relation to a theoretical model that as a trainee I nervously hang onto.

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Appendices

Appendices A – B

Data Driven Processing Scale

In this questionnaire we are interested in WHAT WENT THROUGH YOUR MIND during the traumatic event. Please indicate the extent to which the following statements applied to you DURING THE TRAUMATIC EVENT.

Please rate whether the following statements applied to you AT ANY TIME during the trauma

	Not at all/never	Very little	Moderately	Strongly	Very strongly
1. I couldn't really take it all in	0	1	2	3	4
2. I did not fully understand what was going on	0	1	2	3	4
3. It was just like a stream of unconnected impressions following each other	0	1	2	3	4
4. I could not think clearly	0	1	2	3	4
5. I was overwhelmed by sensations and couldn't put everything together	0	1	2	3	4
6. I was confused and could not fully make sense of what was happening	0	1	2	3	4
7. My mind was fully occupied with what I saw, heard, smelled and felt	0	1	2	3	4
8. My mind was full of impressions and my reactions to them	0	1	2	3	4

Modified thoughts and feeling during the trauma

Listed below are a number of statements that describe thoughts and feelings that people experience during a trauma. Please rate the extent to which these statements apply to your experience DURING THE TRAUMA by circling the appropriate number. There are no right or wrong answers to these questions. Please try to remember how you felt and thought AT THE TIME OF THE TRAUMA, not what you thought afterwards with the benefit of hindsight.

Please rate whether the following statements applied to you AT ANY TIME during the trauma

	Not at all/never	Very little	Moderately	Strongly	Very strongly
1. I lost any will-power	0	1	2	3	4
2. I didn't care what happened to me anymore	0	1	2	3	4
3. I felt completely defeated	0	1	2	3	4
4. I no longer felt like a human being	0	1	2	3	4
5. In my mind, I gave up	0	1	2	3	4
6. I felt destroyed as a person	0	1	2	3	4
7. I wanted to die	0	1	2	3	4
8. I lost any inner resistance	0	1	2	3	4
9. I felt like an object	0	1	2	3	4
10. I felt completely at the mercy of other people or the situation	0	1	2	3	4
11. I felt completely humiliated and lost any sense of human dignity	0	1	2	3	4

State dissociation questionnaire

Listed below are a number of statements that describe thoughts and feelings that people experience during a trauma. Please rate the extent to which these statements apply to your experience DURING THE TRAUMA by circling the appropriate number. There are no right or wrong answers to these questions. Please try to remember how you felt and thought AT THE TIME OF THE TRAUMA, not what you thought afterwards with the benefit of hindsight.

Please rate whether the following statements applied to you AT ANY TIME during the trauma

	Not at all/never	Very little	Moderately	Strongly	Very strongly
1. I felt dazed, unable to take in what was happening	0	1	2	3	4
2. The world around me seemed strange or unreal	0	1	2	3	4
3. My body felt as if it was not really mine	0	1	2	3	4
4. I felt emotionally numb	0	1	2	3	4
5. I felt as if I was separate to my body and was watching it from outside	0	1	2	3	4
6. I felt as if time was going faster or slower than it really was	0	1	2	3	4
7. I felt as if I was living in a dream or a film, rather than in real life	0	1	2	3	4
8. Things around me seemed too big or too small, or distorted in shape	0	1	2	3	4
9. I felt distant from my emotions	0	1	2	3	4

Lack of self- referent processing scale

Listed below are a number of statements that describe thoughts and feelings that people experience during a trauma. Please rate the extent to which these statements apply to your experience DURING THE TRAUMA by circling the appropriate number. There are no right or wrong answers to these questions. Please try to remember how you felt and thought AT THE TIME OF THE TRAUMA, not what you thought afterwards with the benefit of hindsight.

Please rate whether the following statements applied to you AT ANY TIME during the trauma

	Not at all/never	Very little	Moderately	Strongly	Very strongly
1. I felt as if the assault was happening to someone else	0	1	2	3	4
2. It felt like I was a different person from the person I used to be	0	1	2	3	4
3. I was aware that the assault was happening, but not so much that it was happening to me	0	1	2	3	4
4. I felt cut off from my past	0	1	2	3	4
5. I felt cut off from my future	0	1	2	3	4
6. I couldn't imagine anything beyond this experience	0	1	2	3	4
7. Things that had been important to me before did not matter any longer	0	1	2	3	4
8. I felt there was no way back to my normal life after this	0	1	2	3	4

Unpleasant memories questionnaire – Deficits in intentional recall

The following questions relate to the ways in which people sometimes describe their MEMORIES OF AN UNPLEASANT EVENT. Please rate the extent to which these statements apply to YOUR MEMORIES OF THE EVENT by circling the appropriate number. If the statement is not true for you please circle 'not at all'. There are no right and no wrong answers to these questions.

Please rate whether the following statements apply to you AT ANY TIME since the unpleasant event

	Not at all	A little	Moderately	Strongly	Very Strongly
1. I feel that my memory for the event is incomplete	0	1	2	3	4
2. There are periods of time during the event that I cannot account for	0	1	2	3	4
3. I have trouble remembering the order in which thing's happened during the event	0	1	2	3	4
4. My memory of the event is muddled	0	1	2	3	4
5. I cannot get what happened during the event straight in my mind	0	1	2	3	4

Response to intrusions

What do you do when memories of the assault pop into your mind? Please circle the answer that applied best to you DURING THE PAST WEEK.

	Not at all/never	Sometimes	Often	Always
1. I try to push them out of my mind	0	1	2	3
2. I try to erase the memory of the event	0	1	2	3
3. I try hard to control my emotions	0	1	2	3
4. I distract myself with something else	0	1	2	3
5. I think of something else	0	1	2	3
6. I work hard at keeping busy with other things	0	1	2	3
7. I think about how life would have been different if the assault had not occurred	0	1	2	3
8. I dwell on how the assault could have been prevented	0	1	2	3
9. I think about why the assault happened to me	0	1	2	3
10. I dwell on how I used to be before the assault	0	1	2	3
11. I dwell on what other people have done to me	0	1	2	3
12. I dwell on what I should have done differently	0	1	2	3
13. I go over what happened again and again	0	1	2	3
14. I detach myself from the memories	0	1	2	3
15. I drift off into a world of my own	0	1	2	3
16. I numb my feelings	0	1	2	3
17. I drink alcohol, take medication or use drugs	0	1	2	3
18. I put on loud music or TV	0	1	2	3

Maladaptive control strategies questionnaire

You will find below a list of behaviours and actions which people may engage in following an upsetting incident (e.g. assault, accident). Please circle the answer that **BEST DESCRIBES** how **OFTEN YOU DO THE FOLLOWING** (please indicate how often you <u>try</u> to engage in each behaviour even if you were unable to succeed)

	Not at all/never	**Sometimes**	**Often**	**Always**
1. Avoid people who remind you of the incident	0	1	2	3
2. Avoid everyday things that remind you of the incident	0	1	2	3
3. Avoid going to the area where the incident occurred	0	1	2	3
4. Avoid sleeping because of nightmares in case of intruders	0	1	2	3
5. Avoid going out alone after dark	0	1	2	3
6. Allow yourself to remain numb	0	1	2	3
7. Avoid telling people about the assault	0	1	2	3
8. Allow yourself to become detached from what is going on around you	0	1	2	3
9. Avoid looking at TV or newspaper reports about similar incidents	0	1	2	3
10. Avoid going out alone in the daytime	0	1	2	3
11. Avoid being in situations that you cannot completely control	0	1	2	3
12. Avoid forming new relationships	0	1	2	3
13. Avoid unfamiliar places or situations	0	1	2	3
14. Try to distract yourself from distressing thoughts	0	1	2	3
15. Try hard to keep your thoughts and emotions in control	0	1	2	3
16. Try to push thoughts about the incident to the back of your mind	0	1	2	3

Continued over the page

	Not at all/never	Sometimes	Often	Always
17. Put off making decisions	0	1	2	3
18. Make sure that you are not alone	0	1	2	3
19. Sleep with a weapon or carry a weapon	0	1	2	3
20. Check doors and windows are locked	0	1	2	3
21. Deliberately put on or lose weight	0	1	2	3
22. Check for an escape route	0	1	2	3
23. Sleep with the lights / radio on	0	1	2	3
24. Sit/stand/sleep with your back to the wall	0	1	2	3
25. Check behind you	0	1	2	3
26. Overprotect those close to you	0	1	2	3

PDS Symptom Sub-scale

PART 1	Not at all/ Only one time	Once a week or less/ Once in a while	2 - 4 times a week/ Half the time	5 or more times a week/ Almost always
1. Having upsetting thoughts or images about the traumatic event that came into your head when you didn't want them to	0	1	2	3
2. Having bad dreams or nightmares about the traumatic event	0	1	2	3
3. Reliving the traumatic event, acting or feeling as if it were happening again	0	1	2	3
4. Feeling emotionally upset when you were reminded of the traumatic event (e.g. feeling scared, angry, sad, guilty, etc.)	0	1	2	3
5. Experiencing physical reactions when you were reminded of the traumatic event (e.g. break into a sweat, heart beating fast)	0	1	2	3
6. Trying not to think about, talk about, or have feelings about the traumatic event	0	1	2	3
7. Trying to avoid activities, people or places that remind you of the traumatic event	0	1	2	3
8. Not being able to remember an important part of the traumatic event	0	1	2	3
9. Having much less interest or participating much less often in important activities	0	1	2	3
10. Feeling distant or cut off from people around you	0	1	2	3
11. Feeling emotionally numb (e.g. being unable to cry or unable to have loving feelings)	0	1	2	3
12. Feeling as if your future plans or hopes will not come true (e.g. you will not have a career, marriage, children, or a long life)	0	1	2	3
13. Having trouble falling or staying asleep	0	1	2	3
14. Feeling irritable or having fits of anger	0	1	2	3
15. Having trouble concentrating (e.g. drifting in and out of conversations, losing track of a story on television, forgetting what you read)	0	1	2	3
16. Being overly alert (e.g. checking to see who is around you, being uncomfortable with your back to a door, etc.)	0	1	2	3
17. Being jumpy or easily startled (e.g. when someone walks up behind you)	0	1	2	3

Background Factors Questionnaire

Gender

□ Male □ Female

Age

Age on day of incident

Current yearly household income

□ Under £10,000
□ £10,000 - £14,999
□ £15,000 – £19,999
□ £20,000 - £24,999
□ £25,000 - £29,999
□ £30,000 - £34,999
□ £35,000 - £39,999
□ £40,000 – £44,999
□ £45,000 - £49,999
□ Over £50,000

Level of educational qualification

□ GCSEs or 'O' levels
□ Degree level
□ HNC or equivalent
□ Post graduate qualification
□ 'A' levels or equivalent
□ None of the above

Ethnicity

□ White British
□ White Irish
□ Other White
□ Asian Bangladeshi
□ Asian Indian
□ Asian Pakistani
□ Black African
□ Black Caribbean
□ Mixed White and Asian
□ Mixed White and Black African
□ Mixed White and Black Caribbean
□ Other Asian
□ Other Black
□ Other Ethnic Chinese
□ Other Mixed
□ Not stated

Other information

What part of ****** do you work in?

□ Patient transport Service □ Primary care service □ A & E

Prior to this incident, had you ever receive treatment from a counsellor, clinical psychologist, or a psychiatrist? □ Yes □ No

If yes, why did you seek the treatment/what was the problem?

Did you experience any physical, sexual or emotional abuse as a child, or any neglect? □ Yes □ No □ Rather not say

Did you experience any other adverse childhood events, not including abuse? □ Yes □ No

Have you experienced any other traumatic experiences in your life, other than child abuse or the most recent traumatic incident? □ Yes □ No

Is there a history of psychiatric disorder in your family? □ Yes □ No

If yes, what was the disorder?

What relationship are/were you to the person with the disorder?

Psychological Services and informal support

Formal support

1. Following the traumatic incident you recently experienced, have you received any support from a trained psychological health practitioner? ☐ Yes ☐ No

2. If yes, what was their profession?

☐ Psychiatrist ☐ Counsellor

☐ Psychologist ☐ Nurse therapist

☐ Psychotherapist ☐ Other (please state)

3. If yes, how many sessions did you have / have you had? _____

Informal support

4. Following the traumatic incident you recently experienced, have you received any informal support from friends, family or work colleagues? ☐ Yes ☐ No

Incident Severity Questionnaire

Time

1. At approximately what time of day did the incident occur?

2. Approximately how long did the incident last?

□ 5 minutes or less
□ 6 to 10 minutes
□ 11 to 30 minutes
□ 31 minutes to 1 hour
□ Over 1 hour

Incident details

3. □ Witnessed □ Personally experienced

4. □ Verbal aggression □ Physical assault □ Sexual assault

5. How many people were aggressive towards you or the person involved?

6. Did the aggressor(s) have a weapon or make you think they had a weapon? □ Yes □ No

7. Did the weapon come into contact with your body? □ Yes □ No

8. Did the aggressor(s) threaten to harm you in any way? □ Yes □ No

Personal impact

9. Did you suffer any physical injuries as a result of the assault? What were they?

□ No injuries
□ Minor cuts/bruises
□ Major cuts/bruises
□ Burns
□ Broken bone
□ Head injuries
□ Gun shot/stab wound
□ Other (please state)

10. During the incident, to what extent did you think that you would be killed?
(Please put a cross to indicate what you thought **at the time**)

Not at all — 100% sure

11. During the incident, to what extent did you think that you would be seriously injured?
(Please put a cross to indicate what you thought **at the time**)

Not at all — 100% sure

Consequences

12. Were the aggressors arrested after the assault? Did anything happen to them at all? □ Yes □ No

13. Are you involved in any court proceedings or police investigations following the incident? □ Yes □ No

14. Are you trying to claim any compensation following the incident? □ Yes □ No

Ethics

Contents:

Summary of Ethical approval – Please note title change occurred once data collection stopped. Emma Bishop was Principal Investigator for Ethics and so some of the letters are addressed to her.

R&D Site 1

R&D Site 2

Leeds (East) Research Ethics Committee
Room 5.2, Clinical Sciences Building
St James's University Hospital
Beckett Street
Leeds
LS9 7TF

Telephone: 0113 2065652
Facsimile: 0113 2066772

12 July 2006

Ms Annie Moreland
29 Moor Park Villas
Leeds
LS6 4BZ

Dear Ms Moreland

Study title: **Cognitive factors in symptoms of persistent posttraumatic stress disorder in NHS staff following exposure to violence and aggression. Study 1: Generation, refinement and validation of a predictive tool. Study 2: An investigation into the mechanisms of the Ehlers-Clark model of PTSD.**

REC reference: **05/Q1206/44**

I am writing to confirm that the following favourable opinions were given by Leeds (East) Research Ethics Committee to the above study:

A favourable opinion to conduct the research at the Ambulance Service in the North of England was granted on 29 April 2005.

A favourable opinion to conduct the research at the Teaching Hospital in the North of England was granted on 4 October 2005.

Nine substantial amendments were requested, the first on 6 May 2005 and the last on 23 January 2006, and all were given a favourable opinion. The final amendment requested permission to carry our qualitative interviews with staff from the Ambulance Service in the North of England.

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

05/Q1206/44:	**Please quote this number on all correspondence**

Yours sincerely

Ann Prothero

Ann Prothero
Committee Co-ordinator

E-mail: ann.prothero@leedsth.nhs.uk

Ambulance Service NHS

5th May 2005

07786 914008

Annie Moreland
(Psychologist in Clinical training)
Leeds University
29 Moor Park Villas
Leeds
LS6 4BZ

Dear Annie

Re: research project 'The prediction of persistent PTSD in NHS staff and validation of a theoretical model of PTSD.'

Further to our numerous discussions regarding the above project I have pleasure in confirming that the project has been presented to and approved by the Trust Strategic Health and Safety Committee and has progressed through our Ethics Committee approval and project mandate stages of the internal procedures without objection.

I know that you have been to brief the staff who will be assisting you with this project for the 6 months period from May to November 2005, and that you will be continuing your work after that date for a further 6 months maximum in the form of the follow up process agreed as part of this project.

I note your intention to feedback to the Strategic Health and Safety Committee and the Executive Directors of the Trust at an appropriate date in 2006 which is yet to be agreed.

In the meantime if any further strategic input is required then please contact
Health and Safety Manager for assistance. For day to day enquiries you have the names/ contact numbers for the Controls Assurance Managers who are happy to help.

I look forward to receiving your findings from this survey early in 2006.

Ian Walton
Director of Governance

Cc

Enquiries on this matter should be made to:

Tel: (01274) (36) 6808
Fax: (01274) (38) 2640
E Mail:

Telephone:
Text phone for deaf users:

Our Ref: JW/JED/**ELSY 791**

From:
Dr
BSc MB ChB MRCP FFPHM
Director of Research & Effectiveness
Email:
Tel:

11th October 2005

Mrs Emma Bishop
Psychologist in Clinical Training
34 Marlborough Road
Shipley
West Yorkshire
BD18 3NX

Dear Mrs Bishop

R&D Management Approval

Re: *Cognitive factors in persistent posttraumatic stress disorder in NHS staff following exposure to violence and aggression.*
Study 1: Generation, refinement and validation of a predictive tool
Study 2: An investigation into the mechanisms in the Ehlers-Clark Cognitive Model of PTSD
Sponsor: *University of Leeds*

On behalf of Trust, I approve on the terms of this letter the Trust's involvement in this study as Research Site as set out in your R&D Application dated 19th September 2005 and subject to the Trust's standard conditions of R&D Management Approval (attached). Details have been entered onto the Trust's research database (print out attached). Please note the *Start Date*. This is the effective date of R&D Management Approval and is the earliest commencement date for this Trust's participation. The terms referred to are:

- The Trust manages all research in accordance with the Research Governance Framework for England as varied from time to time and compliance by you with this Framework is a requirement of this R&D Management Approval. The Framework sets out the responsibilities and standards that should be applied to work managed within the formal research context. Standards for research governance are available on the Department of Health's website at www.dh.gov.uk/research and are set out under 5 domains of ethics, science, information, health, safety & employment, finance and intellectual property and include legislative requirements, Department of Health requirements and other established standards of good practice from recognised international and national authorities and professional organisations. Professional judgement is necessarily involved in the interpretation of many aspects of the guidance. A direct link to these standards is available on our Research website at

... me otherwise (see attached reply slip), I will assume that you are responsible for ensuring that informed cons and other procedures in the protocol are being adhered to.

- You should notify the Research Office immediately should concerns arise about the safety and welfare participants in this study at the Trust.

- Complete and return to the Research Office:

  (i) An Annual Progress Report each year sent to you starting from the first anniversary of the date of this let (or, in the case of a study which is completed within the year, complete the Annual Progress Report a submit with the end of study declaration, see (iii) below).

  (ii) Copies of any correspondence you receive from the Sponsor or Chief Investigator or Research Eth Committee with regard to the safety or conduct of the study.

  (iii) A completed End of Study Declaration report (attached).

Please help us to improve our service by completing the feedback form and returning it to the Research Office.

Yours sincerely

Director of Research & Effectiveness

Encs