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Hyperacute stroke: the specialist nursing impact. Exploring the cause and context of feelings of secondary traumatic stress. A qualitative inquiry.

Abstract.

Background: Secondary Traumatic Stress (STS) has been defined as the stress resulting from helping or wanting to help a traumatized or suffering person. The hyper acute nature of stroke specialist nurses work places them at risk of developing STS.

Aims: To explore the factors that are influential in stroke specialist nurses experience of secondary traumatic stress development within hyperacute practice.

Methods: This study is qualitative with a narrative design. Data was collected from a purposive sample of stroke specialist nurses (20 female and 2 male) working in hyperacute services during the years 2016 and 2017. Data was analysed using Polkinghorne's approach

Results: This research identified four themes: exposure to acute suffering and death- young presentations, moral distress, interactions with relatives and problematic healthcare systems.

Conclusion: The findings from this study suggest that stroke specialist nurses are exposed to multiple triggers which are commensurate with the potential for STS development. The findings contribute a new understanding of the emotional burden of hyper acute specialist stroke nursing that has implications for patient safety and satisfaction, services provision and staff well- being.

Keywords

stroke, acute, specialist nursing, secondary traumatic stress, narrative research.

Introduction.

Secondary traumatic stress (STS) is characterized by the negative aspects of care precipitated by the person experiencing secondary trauma- the trauma that is experienced after witnessing others undergoing traumatic events (Figley, 1995). Characteristics include insomnia, forgetfulness, intrusive thoughts, hyperarousal and cognitive and behavioural avoidance of trauma reminders (Boscarino et al, 2004). Ultimately this may affect provider's ability to render services, maintain personal and professional relationships and can result in poor professional judgements and emotional exhaustion (Mangoulia et al, 2015).

STS has significant organisational issues for healthcare providers. It has repercussions for staff wellbeing and retention, may compromise the care provided and the quality of service overall, and has a negative impact on patient safety and satisfaction. The identification and reduction of secondary traumatic stress represents a worthwhile investigation for healthcare organisations due to the implications of an increase in staff productivity, reduced absenteeism, increased patient safety and satisfaction (Breen et al, 2014).

Hyper acute stroke care relates to the clinical experience in the first 72 hours. It is characterised by acute neurological illness, emergency admission and intervention, unpredictable or uncertain outcomes and increased mortality. Stroke specialist nurses (SSNs) are at the forefront of the service and pivotal to the care episode (Fitzpatrick and Birns, 2004), with UK SSNs appearing to be more actively involved in the selection and decision making process for interventions such as thrombolysis

(Hamilton et al, 2017). Stroke specialist nurses working in hyper acute care may develop secondary traumatic stress (STS) through repeated exposure to caring for unpredictable acutely ill stroke patients and through being the focal point of time dependent, emergency interventions that are often target/ results driven.

The common theme present in the nursing literature is that stress reactions are induced by being exposed to other people's suffering. Lavoie et al (2011) have suggested three separate means of bearing witness to suffering- exposure as a witness, exposure as a victim and contextual exposure, that is, the circumstances in which the stressful/ traumatic event was encountered. The predominant cause of traumatic reactions appears as repetitive exposure to serious illness, futile care and death (Sabo, 2011). A further consequence of futile care has been the potential for conflict with relatives (Yoder, 2008), resulting in an altered approach to caring (Walsh and Buchanan, 2010). A further precipitating factor was cited as conflict involving physicians. Physicians are referred to in the context of their decisions or demands, futile care, potentially aggravating the situation by not being honest regarding patient's prognosis (Yoder, 2008. Giarelli et al, 2016). Sabo (2011) also suggested possible inter-professional role resentment as a source of friction, citing poor communication, poor support systems and hostile working environments as escalating stress. The literature refers to trigger situations evolving in response to problematic healthcare systems (Melvin, 2012), identifying elements such as heavy work burden, constant prioritising, high acuity, lack of time, overtime/ having to work extra days and general lack of resources. Austin et al (2009) participants described feeling discouraged by management inactivity. Ultimately, system failings are contributory as a causative factor to stress. What is clear is that all these contributing factors are multidimensional with stress reactions being precipitated by different mechanisms and not only in isolation to each other.

While much research has concentrated on secondary traumatisation in oncology, psychiatric and emergency nursing, there has been no study of nurses involved in acute stroke care, who are subject to similarly intense patient's traumas. This study's lead author has been involved in stroke care for over 25 years- much of this was being spent as an advanced nurse practitioner and a clinical manager for a team of SSNs working in the hyperacute arena. The lead writer has bourn witness to many clinical situations that have been traumatic or distressing, which resulted in their own experience of feelings of STS. These experiences have both provoked and informed this enquiry- the aim being to investigate the context and cause by which stroke specialist nurses may experience the development of feelings of STS in the hyperacute setting.

Methodology.

This qualitative study uses a narrative approach. Expressions of interest were sought from stroke specialist nurses who had experienced what they felt to be traumatic/ stressful or upsetting events during the course of hyperacute care delivery. The participants were registered nurses all of which worked in hyperacute stroke services and needed to be involved in the assessment, diagnosis and delivery of emergency interventions to stroke patients. No limit was applied to the nurses' length of experience in undertaking these roles. The potential participants were contacted through their affiliation to regional and national stroke related agencies. Participants were asked to contact the researcher directly (by email) with their expressions of interest to be involved in the study.

Individuals who expressed an interest in participation were provided with the study information sheet and consent forms. The method of data collection was through a mixture of written texts and semi structured interviews. At interview the participants were specifically asked, 'please can you tell me in as much detail as possible of any events related to your specialist hyperacute practice that have made you feel traumatised or distressed'. This question was also asked of the participants

providing their data electronically. The data were collected in 2016 and 2017. Data collection was made using audiotaped semi-structured interviews at an agreed date and location. Alternatively, participants were asked to contribute their stories of traumatic/ stressful events related to hyper acute stroke care electronically via email. The data collected electronically was in the form of a one off response rather than a series of conversations. Electronically collected data and consent forms were returned to a secure email address. This study had the potential to cause distress for the participants and the researcher. Participants could find themselves re-traumatized by recounting or reliving distressing episodes related to their practice. Alternatively, the researcher was exposed to others' trauma material. The university distress protocol for qualitative data collection (Haigh and Witham, 2015) was followed throughout the data collection phase. Interviewed participants were informed they could stop at any point during their conversation. The researcher also stated that they would stop the interview if they felt the participant was becoming uncomfortable. Those who participated electronically were also informed that should they be distressed that they could stop writing their accounts and were under no obligation to submit any data. All of the participants were aware that they could withdraw from the study at any point without need of an explanation. The researcher was given every opportunity to discuss his feelings related to the data collection, transcription and analysis at their bimonthly doctoral supervisory meetings. The participant's responses including names and places were anonymised. Approval to undertake the study was obtained from the Research Ethics and Governance Committee at Manchester Metropolitan University.

The approach to the narrative analysis used in this study was guided by the work of Polkinghorne (1995). All of the electronic data was received in typed format with the exception of one hand-written response. This along with all of the audiotaped interviews was transcribed by the lead researcher. As the collected data existed as fully formed stories and text suggestive of experiences, the analysis of narratives and narrative analysis approaches were both employed. Analysis of

narratives was applied as the analytical method where the data existed as stories- autobiographical accounts of personal experiences, describing how and why events occurred and the actions resulting from them. The data was then read and reread line by line several times to identify key, recurring categories in the text with each response being coded. The codes were developed into interconnected themes and the relationship between them. The narrative analysis approach was used where the data did not present itself in storied form. Where the data did not present as a fully formed story, the actions and events described within it were configured to that of a plot. The plot is the thematic line of the narrative, with different events contributing to the analytical development of a narrative. In this case the plot being that of a presentation of hyperacute stroke, the characters involved (patient, relatives, SSN, doctors, nurses) and the traumatic event. The resulting narrative must not only fit the data but give a significance to that which was not readily apparent in the data (how the events, characters and environment conspired to produce a situation capable of provoking feelings of STS). The overall result is a series of constructions that offer a new understanding of this particular situation- the cause and context by which STS could develop in SSNs engaged in hyperacute stroke care. The chosen methods of data analysis and the subsequent results were debated and verified by the lead author with their doctoral supervisory team who have experience in undertaking qualitative research using narrative approaches.

Results.

The data was collected from 22 participants (12 interviewed, 10 emailed). 20 respondents were female. Ages ranged from 31 to 56 years. No limit was placed on the amount of time spent working within the specialty- the length of stroke related experience ranged from six to twenty years. All of the nurses participating in this study were employed in the sphere of hyperacute stroke care and were involved in the practice of stroke assessment, diagnosis and emergency interventions. The results of this study reported 4 areas describing stroke specialist nurses experiences of hyperacute

stroke care in which lay the cause and context for the potential of STS development: exposure to acute suffering and death- young presentations, moral distress, interaction with relatives and problematic healthcare systems.

Theme 1: Exposure to Acute Suffering- Young Presentations

Many of the experiences referred to within these data refer to vivid memories of what each specialist nurse had referred to as traumatic or upsetting. While a number of stories included elderly patients, by far the majority, reported as traumatic, concerned young patients presenting with major strokes. The outcomes in these patients were generally not favourable and ranged from major disability to death. A number of the responses refer to rapid deterioration and death in previously fit and well young patients, which was difficult for those involved to comprehend. As one nurse stated of a woman of 28 years old admitted with an extensive intracerebral bleed,

'I felt utter sadness that a young person in the prime of her life was going to die....I could not stop thinking about her. How her body looked so perfect on the outside' (P2).

One nurse reported a source of distress on thinking about what the future might be for a young man admitted with a severe acute stroke,

‘Oh gosh, he’s very young, he’s gonna be spending all of his life in a nursing home. You know and he’s young, what is the chance of him being happy?’ (P4).

There is recognition of sorrow for those that survive but have their lives wrecked by these events. The data highlights nurses’ responses to these ‘fractured futures’ which can be ascribed to any age of stroke patient. However, the feeling appears particularly poignant and perhaps more strongly felt when discussing younger patients.

Furthermore, it has been suggested that empathetic engagement is a fundamental consideration in the development of STS (Pearlman and Saakvitne, 1995). Arguably, the nurses involved in this study may identify or feel more empathy with younger patients due to the perceived similarities within their personal lives. Several stories referred to similar ages of the patient, their personal lives and children, as illustrated by one nurses’ experience,

‘She was 34 years old. In my mind I thought she could be my sister. My heart sank when I heard she had a 8 months old baby. My sister had a daughter too. When her husband repeated her name I asked her where was she from. We were both from the same country. I will forever remember this patient and her family because of the similarities with my personal life’ (P15).

Distress was often expressed by the participants involved in this study with reference to complications of interventions with thrombolysis and thrombectomy; one nurse described this as a further source of distress,

‘Treating patients with thrombolysis is particularly stressful because although you know the outcome could be good you also know harm can be done and it takes all your strength to hold the faith that this is the right thing for that patient and hope that they will be ok. I have seen a couple of young men who have had very large strokes who are so ill with large clots in the MCA (Middle Cerebral Artery) and your gut feeling is that this isn’t going to go well but no clinical reason – one then fits, is rescanned has bled and dies the next day, the other has MCA syndrome and is rushed for cranial decompression surgery and ends up with severe stroke brain damage’ (P3).

Theme 2: The Influence of Moral Distress.

Moral distress is the situation whereby practitioners are unable to operate according to their individual standards and is analogous to conflicts between team members as to the direction of care. The respondents in this study also reported on their experiences referring to this and in particular the decision to treat (thrombolysed/ thrombectomy) or not. A number of nurses commented on decisions made by medical colleagues that left them perturbed,

‘I have a particular problem with ED Consultants who are looking for a reason not to thrombolysed rather than give active treatment – They are almost waiting for it to improve or for time to run out and I am in no doubt that this patient should have treatment and am

ready to go and the decision is slow or they decide not to – I find this extremely stressful’
(P10).

It is suggested that where nurses are not involved in the decision making process, are not heard or their views discounted, that this can lead to inter-professional and interpersonal conflict. It is possible to contend that the distress recalled in these stories reflects inter-professional discord resulting in situations which was contrary to these nurses’ sense of patient advocacy, as illustrated by the following story referring one nurses’ feelings regarding an older person’s treatment,

‘There was discussion amongst the team around thrombolysis. There was much debate about his age, previous ability and the fact that he was in a care home. The discussion was around whether it ‘was worth doing’, the need to meet targets, good to get experience and other things along these lines that did not sit comfortably with me and I did say so at the time but it was fair to say that I was probably intimidated by the level of staff around me and felt like I was a lone voice’ (P3).

Theme 3: Interaction with Family Members.

It was recognized that interacting with relatives of acute stroke patients could be emotionally draining. Recognition was made to the difficulties of trying to meet relatives’ needs when working against time constraints and having to prioritize other patient assessments. Several nurses

commented on how they were confronted by multiple anxious relatives while trying to invest all their efforts into giving emergency care, as suggested by the following,

‘You know trying to deal with lots of relatives banging questions at you but at the same time trying to care for someone’ (P1).

Furthermore, it would appear that relative’s inability to comprehend the acute illness and the presumption that treatment will be curative, is crucial to their own and the nurses’ subsequent stress. For example,

‘They sent her for thrombectomy and unfortunately it didn’t work and she bled horrendously afterwards and passed away. And it wasn’t about her actually, you know, it was more about the family that was, afterwards that really couldn’t come to terms with it and how many times I did have to sit down and say she’s not going to recover, they kept saying well she’s had all this, thrombolysed, she’s then been taken to (regional neurosurgical centre), surely they must have been able to sort things out. Only when she died did they actually come to terms with it’ (P6).

Theme 4: Problematic Healthcare Systems.

These data revealed a number of areas where stroke specialist nurses felt that healthcare systems contributed as STS triggers. Many stroke specialist nurses also have coordinating roles revolving around clinical throughput which sees them act as custodians for the acute stroke unit beds. The stroke specialist nurses raised concerns that managing beds as part of their role takes them away

from what they see as the fundamental aspects of their role- assessment, diagnosis and intervention, as in the following,

‘Often feel stressed at situations where there are insufficient beds available for the demand from ED, very busy HASU(hyper acute stroke unit) and demand-can become anxious when patients suitable for thrombolysis need to be seen quickly but there is difficulty getting this achieved when up against a time constraint and when other patients still need assessing’ (P17).

Many of the responses reported feeling stressed by the often unrelenting volume of patients that presented as possible strokes and in need of review by stroke specialist nurses, as the following exemplifies,

‘...the volume of patients is incredibly stressful. You use the word trauma and sometimes I can’t think of a better word. Sometimes I do feel physically, you know, traumatized after coming off a shift’ (P9).

Another nurse offered this consideration of their predicament regarding dealing with a high workload,

‘the times when its stressful for me is when you don’t get a chance to eat, you don’t get a chance to stop, you’re constantly on your feet from the moment you arrive at 7.30 (am) and you’re in A&E then wait till someone turns up for the nightshift’ (P1).

The data found that a number of specialist nurses viewed their role as something different from the established view of nursing. The stroke specialist nursing role with its blurred boundary between nursing and medicine accords well to a situation of ambiguity. Increased patient acuity, multiple comorbidities and enhanced use of new technology are all viewed as increasing uncertainty in healthcare settings. These elements are omnipresent within stroke specialist nursing practice. Stroke specialist nurses are often found working autonomously. The level of responsibility, particularly when contemplating decision making, was an intense source of stress for several nurses,

‘I always go home and think have I made the right decision? Especially when I’m quite autonomous. I’m in A+E and I can go up to two or three patients a day and say no it’s not a stroke but I still kind of you know, worry about that. At my level it’s all about decision making. The hyper acute point of view you’re making these snap decisions’ (P4).

The following story reveals how the combination of acuity, services constraint, unpredictability and family involvement resulted in a terrible situation that resounds with the powerlessness of being forced to bear witness to another’s trauma,

‘We had a patient come in for thrombolysis, but we’ve got nowhere on the ward to put this patient. We’ve got a trolley now in our treatment room so what we had to do was put the patient on the trolley in our clinic room which is obviously not ideal, obviously took the patient down to be scanned and back continued obviously the thrombolysis stuff and then all of a sudden the patient started vomiting but then started bleeding literally from everywhere out of their nose, mouth, everywhere, went completely unresponsive, ended up going into cardiac arrest and literally in the treatment room it was like a bloodbath. I’ve never ever seen it look that way before and that is the one thing that will always stick with me cos it was just awful and obviously her family were there and it wasn’t very nice. It just looked horrendous. It was just a horrendous situation’ (P22).

Discussion.

This study’s findings share resonance with the literature of the nursing experience of traumatic responses in the areas of oncology (Melvin, 2012), acute care (Walsh and Buchanan, 2010) and emergency settings (Lavoie et al, 2011). There can be difficulty in making a distinction between what is considered to be feelings of sadness from that which is traumatic, particularly where the distress has been occasioned by clinically challenging scenarios. However, this study illuminates the important storied experiences of this distress and highlights how practitioners navigate the emotional burden and cost of caring within the context of hyperacute stroke. All of the SSNs who contributed data to this study went on to detail their actual experience of feelings commensurate with that STS (insomnia, anxiety, depression, apprehension, dissonance, and hypervigilance) which were the result of the events they described.

Trauma reactions have previously been identified among stroke patients (Favrole et al, 2013). What is paramount is that stroke patients have been observed as being traumatized by what has happened to them. Conceptually, STS is the response resulting from exposure to a traumatized individual, rather than the traumatic event itself (Komachi et al, 2012). The stroke specialist nurses' responses offer a unique and insightful perspective of bearing witness to patients' traumatic experiences. However, it is possible to suggest that they are being traumatized directly by their immediate involvement. Regardless of whether the mechanism of trauma is direct or secondary, SSNs appear to be exposed to these perils on a regular basis.

Traumatic reactions occur principally in response to witnessing other peoples (patients/ relatives) trauma, which is, suffering a stroke. However, the contexts in which these events occur are highly influential. Many nurses described catastrophic events. Although people of varying ages were affected, the specialist nurses felt particularly distressed by younger patients, findings which resonate with that of Finley and Sheppard (2016) and Fukumori et al (2020). Empathetic engagement, a key determinant of STS development (Figley, 1995), was linked to the specialist nurses responses to these younger patients.

Uncertainty has previously been discussed in the setting of stroke with regards to communication and prognosis (Payne et al, 2010), survivors (O'Connell and Baker, 2004) and carers (Greenwood et al, 2009). There are no papers available that discuss stroke specialist nurses feelings of uncertainty. Stroke specialist nurses are often confronted by scenarios of acute deterioration and fluctuations in patients conditions. Although some of the stories referred to visions which were truly horrific, the sense of trauma was no less realized by the acute and often unpredictable nature of stroke. Many of

the respondents data discusses intense experiences of different clinical trajectories that often couldn't be legislated for. It is these unforeseen and often unpredictable events that have colluded to produce stress reactions in the specialist nurses.

Advances in treatment and technology (thrombolysis/ thrombectomy/ telemedicine) have demanded SSNs role evolution. There exists some variability in the roles of SSNs in the UK. However for those SSNs working in the hyperacute field, many see themselves involved in emergency assessment, investigation, diagnosis and the selection for intervention (Hamilton et al, 2018). The SSN role can be viewed as having a proximity to medicine, while also embodying elements of the traditional and specialist roles and taking on those of advanced practice (Sanders and Ashman, 2018). However, the blurring of roles and responsibilities can also serve to increase uncertainty, not only for the nurses themselves but also of the expectations demanded of them.

Crippen (2016) refers to moral distress in the context of individual's standards being compromised by others. Many of the stroke specialist nurses made expressions of passion for their deeply held set of values. However, they also discussed feelings of their values and beliefs being violated by decisions either being removed or imposed upon them. The data suggests that these deeply held values that form these nurses' moral fabric have been at best ignored and at worst have been violated. The data does not state the nurses as being silent, but their opinions were marginalized and one went so far as to say they felt intimidated.

The families of people that present with acute strokes need to seek information and knowledge related to the clinical condition (Hafsteinsdottir et al, 2011). However, this demand is not always met, with staff reported as having little insight into relatives information needs (Morris et al, 2007).

Families may feel traumatized themselves on seeing their loved ones in distress. This, along with possible problems of insight can be projected onto the specialist nurses and so increasing their sense of tension.

The atmosphere of conflict and constraint has also been denoted as elements conspiring to produce stress reactions. There were several areas of the service which were described as demanding. The nature and complexity of hyperacute stroke care places the specialist nurses under added duress. The atmosphere of constraint is perpetuated by the need to make appropriate clinical decisions and prioritize patient care while managing different role demands and trying to meet nationally set targets.

Stroke specialist nurses are impacted on by heavy workload, high acuity and the need for prioritization. Burns et al (2013) have argued that organizational and service failures can lead to institutional abuse. The stroke specialist nurses' data does not indicate abuse as such; there is service and organizational inadequacies that hinder these nurses' practice. It is possible to contend that these service and organizational deficiencies, such as time and space, lay outside of the specialist nurses' direct influence. It is therefore creditable that highly specialized acute care is maintained under such duress.

What also becomes familiar is that often these specialist nurses, often working in isolation for long shifts, take the brunt of these emergency referrals. This solitary means of working left some nurses feeling deserted. Specialized roles impart greater responsibilities previously situated in the domain of medicine. As each of these participants had offered up stories of their traumatic experiences, their worries in regards to decision making could be seen as sustaining their traumatization.

In summary, the context of stroke specialist nurses stress is multifactorial. The themes permeating the data were consistent among the SSN responses collected at interview and electronically.

Constancy was also apparent in what the nurses described as traumatic was the same whether the events occurred in centralised (hub) hyperacute centres or local hospital stroke units. The participants in this study were specifically asked for stories of what they felt had caused them trauma as part of their practice. None of the responses deviated from this. No events were described by these nurses where they did not feel traumatized by what they had experienced.

Lavoie et al (2010) have referred to the evolution of trauma reactions in the circumstances of being a victim, being a witness and the influence of the conditions in which the event occurs. Much of the data has offered thick descriptions of traumatic events positioned in the sphere of hyper acute stroke specialist nursing. However, not all of the data presented here concerns itself with the elemental characteristic of STS, that is, being witness to someone else's' trauma/ suffering. There is a combination of additional influences referred to - acute illness in varying age groups plus/ minus intervention, increased mortality, ethical considerations, inter-collegial disputes, interaction with relatives and service demands and expectations. All potentiate the risk of adverse stress reactions and increase the possibility of STS among stroke specialist nurses.

STS has been cited as having a negative impact on staff wellbeing and retention and increased absenteeism. It can furthermore result in compromised care and be detrimental to the quality of care provision (Meadors and Lamson, 2008). Specialist stroke nurses and their managers need to have an appreciation of the causes and the context in which they can become subject to STS development. Hyper acute stroke practice calls for its specialist nurses and their managers to

develop strategies to recognize and negate STS at individual and organizational levels (Duffy et al, 2015).

This study **has** several limitations. These data were collected from a purposive sample over a prolonged period of two years and by one researcher. The data was collected in the years 2016 and 2017. As hyperacute services have evolved in the preceding years it may be of interest to see if the areas described still resonate with SSNs. Collecting data electronically allowed the researcher to access participants over a wide geographical space. However, it is not possible to know with certainty if the participants were distressed by recounting their experiences. While participants who contributed their data electronically were safeguarded from the researcher's influence, non-verbal data such as facial expressions, body language, voice tones and tears, were lost to the interpretation.

Conclusion.

The aim of this study was to describe and discuss the cause and context of STS occurring within stroke specialist nurses. The causes appear to be multifactorial and can occur either in isolation or in combination. Stroke specialist nurses dealing with hyper acute presentations are exposed to these elements by the very nature of their work and are at risk of developing STS.

Key points for policy, practice and/ or research

- The causes and context of secondary traumatic stress in stroke specialist nurses is complex and multifactorial.
- Findings support the need for greater recognition of the emotional burden of specialist stroke nursing.
- Findings call for stroke specialist nurses and their managers to develop strategies to recognize and negate secondary traumatic stress at individual and organizational levels.

Declaration of conflicting interests

No conflict of interest to declare.

Ethical considerations

This research obtained ethics approval from the Board of Ethics, Manchester Metropolitan University.

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