

Intensive care – Easing the trauma



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PAUL SKIRROW, CHRISTINA JONES, RICHARD D. GRIFFITHS and SUE KANEY (Liverpool University's Intensive Care Research Group) describe some of the little-known psychological consequences of a stay in intensive care.

INTENSIVE care units (ICUs) are facing increasing demands, partly as a result of the gradual 'greying' of the population in Great Britain. As a consequence, the provision of intensive care services has become an important area of both political and scientific interest over recent years. What is only now becoming apparent is the high rate of post-ICU psychological problems. While one might expect an ICU stay with a life-threatening illness to be fairly traumatic, the rate of major psychological problems such as post traumatic stress disorder (PTSD) is surprisingly high.

A great deal of the scientific research into intensive care has been stimulated by the recent innovation of long-term patient follow-up after intensive care. Liverpool University's Intensive Care Research Group, the first advocates of follow-up in the UK and composed of individuals from a wide variety of clinical backgrounds, has led the way in clinical research in this area. In particular, a great deal of progress has been made in understanding the factors influencing physical recovery after intensive care (Jones & Griffiths, 2000) and some of the long-term physical complications arising from ICU treatments (Jones *et al.*, 1997).

In this article, however, we hope to highlight what is arguably the greatest area of growth in intensive care research over the last decade – the long-term psychological effects of a stay in intensive care. In particular, we hope to raise the profile of the causes of PTSD in these

patients and emphasise that its occurrence may be due more to the ICU stay than to the precipitating factors for the admission. Although research into this field remains limited, we hope to provide a broad overview of the psychological issues associated with a stay in intensive care and, in the process, to raise the profile of this fascinating field within the psychological community.

Psychological distress following intensive care

Over recent years concern has been growing over the large proportion of intensive care patients who go on to experience long-term psychological disturbance. In a recent study of patients with an ICU stay over 4 days Koshy *et al.* (1997) found that up to 15 per cent of their sample were suffering from post-traumatic stress disorder (PTSD) nearly a year after discharge. This figure seems high when compared with 1 per cent of the general population, 19 per cent in disabled war veterans (Gregurek *et al.*, 2001) and 3.5 per cent of victims of assault (Jones *et al.*, 1998). Indeed, one study (Schelling *et al.*, 1998) found the incidence to be as high as 27.5 per cent in a subgroup of patients with acute respiratory distress syndrome (a disorder characterised by respiratory failure due to an inflammation of the lung). Many patients seem to be at an increased risk of developing depressive illnesses, anxiety or panic disorders for up to a year after discharge (Jones *et al.*, 1994), and there is now increasing evidence to suggest that

a significant proportion of ICU patients go on to experience considerable psychological distress for months, and even years, after their stay. It is likely that this high rate is due to traumatic memories of ICU rather than to the event that led to the development of critical illness. Patients admitted to ICU following accidents have a surprisingly low rate of PTSD (1.9 per cent) related to the original trauma (Schnyder *et al.*, 2001)

The recovering ICU patient

This extraordinary pattern is, perhaps, reflective of a number of psychological factors that are peculiar to the ICU patient. As with many sufferers of long, severe illnesses, ICU patients will often experience profound muscle wasting and will feel considerable impairment in their respiratory and cardiovascular functioning (Jones *et al.*, 1998). A substantial proportion of patients' psychological distress, therefore, is likely to come from their reduced physical functioning as a result of their illness, and it will take many months, sometimes even years, for intensive care patients to recover to their pre-morbid level of physical functioning.

In contrast to any other form of severe illness, however, is the ICU patient's frequent inability to remember the events that caused his or her decline. Perhaps due to the widespread use of sedative and analgesic medication, or to factors more closely related to the illness process itself, the ICU patient will often have complete amnesia for their time in intensive care or

the events that led up to their admission. In one study 43 per cent of the patients could not recall being admitted to hospital (Jones *et al.*, 2000). The ICU patient may have little concept of how close to death they actually came, and many become frustrated at the slow progress of their recovery.

Conversely, the patients' relatives who have witnessed them so critically ill for days and even weeks on intensive care, can be terrified by the possibility of a relapse and can become extremely overprotective (frequently to the detriment of the patient's recovery). It is hardly surprising, therefore, that the symptoms of anxiety, depression and PTSD have also been found to be particularly high in the relatives of intensive care patients (Jones & Griffiths, 1995).

But why PTSD? Hallucinations and delusions in ICU patients

Given these considerable obstacles to physical recovery after intensive care, together with the fact that physical health has been shown to have strong effects on mental health (e.g. Sykes, 1994), it is not surprising that some intensive care patients will experience anxiety and depression after their discharge. However, far more mysterious is the high prevalence of PTSD-related symptoms after an ICU stay. Given that the patient will often remember very little or nothing about their time in intensive care, it seems surprising that the symptoms of PTSD (a disorder characterised by intrusive 'flashbacks' and an avoidance of situations reminiscent of the traumatic event) should be so common. Indeed, there is some evidence to suggest that a lack of memory for traumatic events protects against the later development of PTSD (e.g. Warden *et al.*, 1997).

One possible explanation has recently been put forward. Jones, Humphris *et al.* (2001) examined the relationship of scores on various measures of anxiety, depression and PTSD-related symptoms to patients' cued recall of their stay in intensive care. The memory tool used, the ICU Memory Tool (Jones, Humphris *et al.*, 2000), probed for three types of recall: that for factual events (cues such as 'a tube in the nose'); memories of feelings (cues such as 'pain', 'panic', or 'feeling confused'); and delusional memories (cues such as 'thinking people were trying to hurt them', 'hallucinations' or 'nightmares'). Interestingly, rather than the amount of memory for intensive care, it seems that it is the content of that memory that affects emotional recovery. High scores on all

measures were consistently predicted by the presence of 'delusional memories' – the memory of hallucinatory or delusional experiences from intensive care.

The occurrence of bizarre hallucinations and delusions in ICU patients has been virtually unknown outside of medical circles, despite being noted by the very first intensive care physicians in the 1950s. This so-called 'ICU psychosis' is now well documented in the intensive care literature, with some reports estimating its incidence to be as high as 72 per cent (Curtis, 1998). Despite the consensus on its occurrence, however, the question of what might actually cause these strange experiences has never been satisfactorily addressed. For example, a number of authors have suggested that it might be caused by an acute organic reaction or delirium (e.g. Sitzman, 1993), a psychogenic 'dissociation' (e.g. Blacher, 1997) or, most popularly, by the ICU environment itself (e.g. Curtis, 1998). One study of ICU patients found that 32 per cent of patients showed signs (e.g. delirium) of drug withdrawal reactions from opiates and sedatives used in ICU (Cammarano *et al.*, 1998). The high doses of opiates and sedatives used while patients are in ICU may therefore contribute to these experiences, but it is likely that there are other precipitants; for a review of possible causes see Jones, Griffiths *et al.* (2000).

Without question, the ICU patient must go through a particularly disturbing series of experiences. With little advanced warning, the intensive care patient is suddenly plunged into a world of machines that flash and beep, of tubes and wires that seem to spring from almost every orifice, and of mind-numbing sedative and analgesic medications. The patient will invariably require some form of mechanical support to breathe, without which they would undoubtedly die. The life-threatening nature of the patient's illness means not only that severe physiological derangement is extremely

common, but that patients may feel (often quite justifiably) in fear for their very lives (Blacher, 1972).

Interestingly, however, despite the numerous similarities with the so-called 'near death' experience, intensive care patients' experiences are typically of a highly unpleasant nature. Out-of-body experiences, tunnels and bright lights are replaced by feelings of persecution by doctors and nurses, by alien abductions and by bizarre hallucinations of sea voyages (see Box). Indeed, if these really were 'dissociative' experiences, created in order to escape from real-life terrors, one might wonder why the reported hallucinations and delusions often appear more frightening than the ICU experience itself. So disturbing are these experiences that, following their discharge, many patients continue to have flashbacks of their hallucinations and will often report considerable difficulty in separating real experiences from those they had imagined.

Post-ICU rehabilitation

As with a number of psychological disorders, most notably schizophrenia (Helmsley, 1994), the issue of whether the emphasis should be on actually eliminating the cause of the distress (e.g. hallucinatory and delusional episodes), or on providing the individual with effective resources to cope afterwards, is of particular importance in intensive care. The latter method, of long-term psychological follow-up, has grown to be increasingly popular in recent years. With co-workers (e.g. Jones *et al.*, 1998) we have particularly advocated the use of an intensive care 'follow-up' clinic to provide patients with information on both their ICU stay and their expected recovery. In addition, recall of unpleasant or intrusive memories for ICU is discussed and normalised as early as possible after ICU discharge. This is repeated in clinic. In a similar vein, one small Swedish study has shown that the simple provision of an 'ICU diary' (containing a day-by-day account of

EXAMPLES OF ICU PATIENT HALLUCINATIONS

'Almost my entire family had been replaced by aliens that had taken human form.'

'I knew I was in hospital, but I thought that I was there to have twins [male patient]. The staff were keeping me there because I was such a medical marvel.'

'I remember thinking that I was being kidnapped by a gang of Chinese Triads.'

'I thought that I was on holiday in Turkey. I was in a seaside cafe that I had been to many years ago.'

'I became convinced that every doctor and nurse on the unit was part of a plot to murder me.'

the patient's stay together with photographs and entries made by staff) can be particularly helpful in coping with amnesia and hallucinatory and delusional experiences (Backman & Walther, 2001).

Despite this, only a handful of British ICUs currently offer long-term follow-up and, of those, even fewer enjoy the support of psychological or counselling services within the hospital. Fortunately, this pattern is beginning to change. The evidence to endorse the provision of psychological support for recovering ICU patients has been so great that a recent Audit Commission report into critical care services recommended that all British ICUs should provide some form of post-discharge follow-up (Audit Commission, 1999). This has recently been reinforced by a government review paper (Department of Health, 2000).

Treatment versus prevention

As we have already mentioned, there is increasing support for the long-term rehabilitation of the recovering ICU patient, but there still remains little research into ways of actually combating psychological disturbance on the ICU. There is very little evidence to support any of the current approach, and until we know more about the aetiology treatment is unlikely to advance. The presence of oral or tracheal tubes to allow the patient to breathe complicates the recognition of hallucinations and delusions and certainly prevents most kinds of

psychological intervention within ICU. To date, the only form of intervention that has been used routinely for these experiences has been pharmacological. Patients who are obviously experiencing hallucinations and delusions are often prescribed antipsychotic medications such as haloperidol – although their provision is generally on the basis of overt psychotic behaviour rather than discussion with the patient.

In a sense, however, the intensive care environment is particularly conducive to psychological intervention. Unlike most other traumatic experiences, such as wars or aeroplane crashes, the ICU might conceivably be changed to render it less traumatic. Unfortunately, the majority of attempts to accomplish this have been made on the basis of the assumed underlying cause of psychotic experiences, with a number of authors attempting to encourage patients' sleep, some providing greater sensory stimulation, and some less (e.g. Gelling, 1998).

Future directions

Psychological and environmental interventions in ICU have rarely been made on the basis of controlled clinical trials. The primary therapeutic goal of ICU is to save the patient's life; unfortunately some of these interventions may have a role to play in causing hallucinations (Jones *et al.*, 1998). If, through controlled clinical studies, we could determine which aspects of intensive care might lead to psychotic

experiences and to the development of more long-term psychological difficulties, we would have certainly made the first step towards the prediction, or indeed prevention, of these problems. Until that time, however, it remains vital that we recognise the intense psychological problems experienced by many intensive care patients and make particular efforts to help them cope afterwards.

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