



Research paper

Inattentive blindness and failures to rescue the deteriorating patient in critical care, emergency and perioperative settings: Four case scenarios



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ABSTRACT

Background: Failure to identify and respond to clinical deterioration is an important measure of patient safety, hospital performance and quality of care. Although studies have identified the role of patient, system and human factors in failure to rescue events, the role of 'inattentive blindness' as a possible contributing factor has been overlooked.

Objectives: To explore the nature and possible patient safety implications of inattentive blindness in critical care, emergency and perioperative nursing contexts.

Methods: Analysis of four case scenarios drawn from a naturalistic inquiry investigating how nurses identify and manage gaps (discontinuities) in care. Data were collected via in-depth interviews from a purposeful sample of 71 nurses, of which 20 were critical care nurses, 19 were emergency nurses and 16 were perioperative nurses. Case scenarios were identified, selected and analysed using inattentive blindness as an interpretive frame.

Results: The four case scenarios presented here suggest that failures to recognise and act upon patient observations suggestive of clinical deterioration could be explained by inattentive blindness. In all but one of the cases reported, vital signs were measured and recorded on a regular basis. However, teams of nurses and doctors failed to 'see' the early signs of clinical deterioration. The high-stress, high-complexity nature of the clinical settings in which these cases occurred coupled with high cognitive workload, noise and frequent interruptions create the conditions for inattentive blindness.

Conclusions: The case scenarios considered in this report raise the possibility that inattentive blindness is a salient but overlooked human factor in failure to rescue events across the critical care spectrum. Further comparative cross-disciplinary research is warranted to enable a better understanding of the nature and possible patient safety implications of inattentive blindness in critical care nursing contexts.

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1. Introduction

The role of human cognition, attention and perception are now widely recognised and are being increasingly implicated in patient safety practices and outcomes across the globe. In keeping with this stance, the nature and implications of 'situational awareness' and 'inattentive blindness' in clinical settings together with their possible impact on patient safety outcomes have become notable areas of inquiry.^{1–4} Even so, the notion and nature of inattentive blind-

ness in critical care, emergency and perioperative contexts are less well known or understood. A key aim of this report is to readdress this oversight in the hope of stimulating future inquiry into both the nature and possible patient safety implications of inattentive blindness in critical care nursing contexts.

1.1. Conceptual clarification

Before proceeding some clarification is warranted on what is meant by the notions of 'inattentive blindness' and 'failure to rescue' as used for the purposes of this report.

1.1.1. Inattentive blindness

Inattentive blindness may be broadly defined as the failure to see things that are in plain sight on account of being unexpected.^{5,6}

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The notion and nature of inattentive blindness, first described by Neisser,⁷ have been popularised in a psychological experiment conducted by US researchers Chabris and Simons.⁵ In the experiment, participants were invited to watch a short video of six people passing basketballs to each other and to keep count of the number of passes made by one team. During the video, a person dressed in a gorilla costume strolls into the middle of the action, faces the camera, and then leaves, spending nine seconds on the screen. As many as half of the people who watched the video and counted the passes failed to notice the gorilla—it was as though it was 'invisible'. The findings of the experiment revealed, in a humorous way, the limitations of people's cognitive abilities and how their everyday illusions of 'attention, memory, confidence, knowledge, cause and potential' can lead not only to distorted beliefs, but dangerous ones – notably about 'how we see our world – and about what we *don't see*' [emphasis added].^{5(p.9)}

Chabris and Simons' experiment gained global attention after being popularised via a YouTube video 'The invisible Gorilla' and the publication of Chabris and Simons' book by the same title.⁵ It is now widely used and stands as a useful educational tool for improving learners' understanding of the limits and risks of their everyday and often taken-for-granted ideas and beliefs about their own knowledge, memory and capacity to 'pay attention'.

1.1.2. Failure to rescue

The term 'failure-to-rescue' was first coined by Silber et al. to describe in-hospital death from complications as distinct from death per se (i.e. the number of deaths per number of patients).⁸ Key studies revealed that occurrences of failure-to-rescue were associated more with hospital characteristics (i.e. availability of technology, physician staffing levels, average daily census, nurse–patient ratio) than the severity of the patient's illness.^{8,9} Over the past two decades failure-to-rescue has evolved into a measure of patient safety, hospital performance and quality of care.¹⁰ In hospital contexts, it is considered a gauge of an organisation's 'rescue capability', that is, its ability to recognise patient complications and clinical deterioration and respond with appropriate clinical management.^{11,12}

Many of the processes introduced to mitigate failure to rescue have primarily had as their focus incidents in hospital ward settings. Thus their applicability to settings across the critical care spectrum (i.e. critical care, emergency and perioperative care), where systems are already in place to care for patients with acute and unpredictable needs (i.e. skilled clinicians, medical back-up, hemodynamic monitoring, and higher nurse to patient ratios), might seem unnecessary. Even so, failure to recognise and respond to clinical deterioration may also occur in critical care domains.¹³ A possible explanation for this can be found in the notoriously high-risk, high-stakes, high-stress, and high-complexity nature of these settings, which, when coupled with high cognitive workload, noise and frequent interruptions create the potential conditions for attentional, cognitive and perceptual errors (inattentive blindness) to occur.^{5,14}

Failure-to-rescue is a multifaceted problem, characterised by the complex interplay between numerous patient, system and human factors including patient demographics; individual variation in the physiologic signs of deterioration; education and training of staff; equipment and resources; teamwork and communication; and organisational factors.^{11,15} Responses to the problem

have largely focused on improving the recognition and management of clinical deterioration through track and trigger and early warning systems, medical emergency teams, communication tools and simulation training methods.^{10,16,17} What has been overlooked in this process, however, is the possible incidence and negative impact of inattentive blindness in failure to rescue scenarios and what strategies might be used to help counteract this tendency.

The four case scenarios presented and discussed in this report are drawn from the findings of a larger study that aimed to explore and describe the types of gaps (discontinuities in care) that nurses encountered in their everyday practice and the processes nurses used to prevent the potentially harmful effects of these gaps from reaching patients.¹⁸ A key gap identified in the context of the larger study was the failure of nurses to recognise and respond to the deteriorating patient. Here, we report on four case scenarios which occurred respectively in critical care, emergency and perioperative settings and where the early signs of clinical deterioration were overlooked. The phenomenon of inattentive blindness offered an explanation for the failure of nurses and other members of the healthcare team to recognise and act upon the patient observations that were suggestive of clinical deterioration. These cases were selected on account of their salience and their capacity to provide insight into the phenomenon of inattentive blindness. The component of the study reported here concerns the nature and possible patient safety implications of inattentive blindness.

2. Methods

2.1. Design

The larger study on which this report is based was undertaken as a naturalistic inquiry using a qualitative exploratory descriptive (QED) research approach informed by the works of Lincoln and Guba¹⁹ and Patton.²⁰ The study was approved by the Human Research and Ethics Committee at Deakin University and one metropolitan health service at which participant recruitment and interviewing occurred.

2.2. Sample

A purposeful sample of 71 registered nurses was recruited to the original study using snowballing and open recruitment strategies. Criteria for inclusion were (i) current registration as a Registered Nurse in a state or territory of Australia; and (ii) current employment in a clinical setting relevant to the study. Nineteen participants were emergency nurses, 20 were critical care nurses, and 16 were perioperative nurses. The remaining participants worked in neurosciences and rehabilitation and transitional care settings. The nurses were employed in metropolitan or regional and rural settings in all States and Territories of mainland Australia. Two participants were living and working outside Australia. The number of participants recruited and interviewed from each clinical context is summarised in Table 1.

2.3. Data collection

Data were collected via in-depth, semi structured interviews using three methods: (i) face-to-face interviewing (n = 15), (ii) telephone interviewing (n = 46), and (iii) e-mail interviewing (n = 10).

Table 1
Number of participants interviewed from each clinical setting.

Emergency	Critical care	Perioperative	Rehabilitation & transitional care	Neuro-sciences	Total interviews
19	20	16	14	2	71

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