

EDUCATION AND TRAINING **Incivility and the clinical learner**

Authors: Laura JE Cheetham^A and Christopher Turner^B

ABSTRACT

The impact of incivility in terms of individual and team performance in clinical environments is increasingly acknowledged and supported by a growing evidence base. However, clinical environments are not just areas where patient care is delivered, they are also rich, key learning arenas for healthcare professionals. To date, the potential impact of incivility in clinical environments on healthcare professional learning and development has not been comprehensively explored. This article provides an overview of the physiological mechanisms that inhibit learning and memory recall in individuals experiencing or observing incivility and social stress. It establishes a clear need for focus on the impact of incivility on clinical learners and educators and further evidence for the need for clinical environments in which civility is firmly rooted into the pervading culture.

KEYWORDS: Incivility, learning, prefrontal cortex

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Introduction

There is increasing acceptance of the impact of incivility in clinical workplaces in terms of reduced performance of both the recipient and bystanders.^{1,2} What has been less well explored is the impact that incivility has on one key area in healthcare – learning. It is a requirement that all doctors engage in lifelong learning with a significant portion of this knowledge development occurring in the clinical workplace, where it is generally done in a Socratic or didactic fashion. From the perspectives of professional performance and patient safety, it is in the interest of teachers, learners and patients that we make this education as efficient and effective as possible.

Could civil environments promote learning and recall

Over the last 20 years, the evidence base around the impact of incivility on individual and team performance has grown to include healthcare environments, with simulation-based studies showing a statistically significant decrease in performance even when the

rudeness is mild.¹ Incivility manifests itself as stress (arousal), steals from our working memory and extends beyond the direct recipient to bystanders and patients. The behaviours can be verbal and non-verbal; they extend from simple rudeness and undermining, and can continue all the way through to overt bullying.

There is now a growing body of evidence that stressful learning environments, including where the stress is received as being generated by the educator, can both directly and indirectly impact on the ability of learners to develop effectively.

Therefore, could incivility, as a specific form of perceived stress, be a detriment to learning?

Medical education relies on the delivery of effective, high-quality learning within clinical environments, and is a core component of quality assurance for all healthcare professionals. What elements make up a high-quality learning environment where the potential for learning is maximised? Studies suggest that there is a need for a psychologically safe learning environment without exposure to unnecessary stressors, to strengthen human memory.^{3,4}

Learning underpins all aspects of medical professionalism in order for individuals and clinical teams to consistently and continually deliver the safest and highest-quality patient care.⁵ It appears, increasingly, that hand-in-hand with effective learning is a need to maintain learner wellbeing. Psychologically safe environments are open, allowing for creative conflict where individuals feel able to express opinions and where there is less time spent on 'image management'. When staff feel psychologically safe they are able to ask the questions that are troubling them and to raise issues that concern them. This has obvious implications for both the learning of the individual and for patient safety. Civility fosters a psychologically safe environment by reducing the negative responses to questions posed by learners and, when they are in turn questioned, to incorrect responses from the learners.

Mechanisms through which perceived hostile environments impact learning

The mechanisms by which incivility can damage wellbeing are various in learners: inciting stress, unhappiness, fear, anxiety, a heightened threat response and sleep disturbance.^{6–10} Incivility results in disruption of the educator–learner relationship by creating unwanted distractions in busy clinical learning environments and so loss of concentration on the task at hand and, for others, loss of self-esteem. All of these factors are known to impact on the quality of learning.^{3,12–17}

There is a body of evidence suggesting that stress impairs learning (ie the process of receiving and encoding information and recalling memories to build on) other than that pertaining directly to coping or escaping from the stressor.¹⁸ Research also

Authors: ^Ageneral practitioner registrar, Worcester Acute Hospitals NHS Trust, Worcester, UK; ^Bconsultant in emergency medicine, University Hospitals Coventry and Warwickshire NHS Trust, Coventry, UK and co-founder of Civility Saves Lives, UK.

suggests that while emotionally driven information resulting from a traumatic event may be retained far more effectively than 'neutral' information, building further knowledge based on prior information recall is substantially impaired.^{4,19} This means that stress may enhance memories of emotional material related to the stressful context, but any other information related to that event is typically not well remembered, as stress may impair the encoding of neutral information. Clinical knowledge is less likely to be emotion-based than neutral, which means that factual knowledge retention (declarative memory) may be poorly promoted in a stressful learning environment such as one caused by incivility.

There is evidence to show that raised adrenaline levels (and possibly cortisol levels) and activation of an acute stress response, including increased activity in the amygdala, reduce embedding in short- and long-term memory.²⁰ In contrast, there is some evidence that raised stress (arousal) levels in the 20 minutes prior to a learning event may increase recall. This latter finding is based on mild to moderate stress levels in schools and may not be generalisable to adult workplace-based learning, such as perceived hostile questioning in medicine. Medical students report greater than average stress levels, with interactions with consultants being rated as the most stressful experience during their placements.²¹ Stress signalling pathways impair prefrontal cortex function reducing the ability to learn new concepts and build new learning around previously encountered and embedded concepts.^{3,22,23} In addition, induced stress moves brain activity to affective brain areas, executive areas and the hippocampus; this could impair attention, assimilation and accurate memory encoding.²⁴ Stress has been shown to have a substantial effect on memory in a time dependent way; longer or more frequent exposure to stress has more of a detrimental effect on learning and memory.²⁵ Recurrent exposure to perceived stressful situations has been shown to result in changes to dendritic length, branching and spine loss in the prefrontal cortex. This is important for working memory and the longer-term memory encoding process and leads to expansion of dendrites in the amygdala instead of longer-term memory pathways.²²

There are other potential effects of stress on the recall of established knowledge learnt in the past if this information is recalled under stressful conditions. The process of retrieving pre-existing information under stress is thought to make this knowledge more unstable and fluid prior to reconsolidation.²⁶ Thus, previously learnt knowledge can be impaired or distorted if done so under stressful conditions, losing or reducing the amount or quality of prelearnt material. Given that doctors are required to be lifelong learners, consistently building on knowledge already acquired, the impact of stress caused by incivility on pre-existing knowledge is worthy of note and of further investigation. The mechanism of this is thought to be most likely due to the effects of stress on the hippocampus and prefrontal cortex.^{27,28} Therefore, the more frequently clinicians are immersed in an uncivil environment, the more their learning and development slows.

Particular forms of learning that may be even more negatively affected by incivility, in terms of the degree of information and knowledge learnt in a stressful environment, are tacit learning and multisequencing learning.³ Tacit learning is a cornerstone of identity as a doctor, of our practice and of our professionalism, it is the mechanism by which we absorb and integrate medical culture, communication skills and a plethora of other factors which constitute the 'hidden curriculum'. Multisequencing learning allows medical practitioners to learn new practical and procedural

skills among other elements of their development. There is evidence also that information recalled from memory during stressful situations might be 're-learnt' or modified incorrectly directly as a result of stress exposure.³ It is possible that the stress caused by incivility in our clinical learning environments not only impair our efforts to learn but also erode knowledge we have already acquired.

Studies also suggest directly that incivility within the clinical educator and individual learner relationship results in impaired learning. Suggestive causative reasons are the development of mistrust; a negative and ineffective relationship; a sense of feeling 'put down'; loss of respect; disempowerment; stress and fear development; and erosion of confidence and effective communication – in summary, the creation of a negative and dysfunctional learning environment.^{17,29,30}

Research regarding nursing learners is more extensive than for physician learners, with one study going so far as to state that 'Incivility is the largest documented barrier to student–faculty relationships in nursing and is an element associated with students not achieving desired academic outcomes.'³¹

There are further potential ramifications of incivility for clinical education including implications for the next generation of learners. Potentially, through role modelling, the approach to delivering teaching in an uncivil way could be perpetuated if learners assume that this approach is the inherent, expected and accepted way that clinical education should be delivered in their communities.

Avenues for further research

There is currently a paucity of research directly quantifying the impact of incivility by educators or peers on learning when in a medical environment. Additionally, there is little understanding of whether learning is affected in different ways depending on the format of the clinical educational session; for example, bedside teaching versus practical skill training versus debrief teaching.

Investigating the underlying neural mechanisms that may be involved in the impact of incivility during a teaching encounter on memory and learning would lead to greater understanding of how educators can adapt their approaches to maximise the value of clinical learning.

Further research could, in the simulated environment, directly investigate the retention of learning in controlled simulated clinical learning environments versus clinical teaching scenarios with different forms of stress present, including incivility. This has the potential to help separate the impact of different stressors and aid clarity regarding which of the potential stressors that can occur within a complex clinical environment have a negative impact on learning, and to what extent they do this. This would provide valuable insights both for the clinical teacher and the learner.

Conclusion

There is a growing body of evidence indicating that incivility has a negative impact on learning and recall, though the evidence is stronger for recall than learning and the impact of stress on learning may vary substantially depending on the emotional and stress-related nature of the information itself. This evidence sits alongside our knowledge that incivility reduces performance in complex clinical environments. On balance, we believe that the

benefits of civil behaviours outweigh any benefits of increased stress for learners. It is key that the link and potential impact of behaviours in clinical learning environments are explored further. If incivility in the learning relationship has negative implications for learning, then setting the compass for educator–learner interactions firmly towards civility would be a simple and effective way to enhance and accelerate the development of doctors, and other clinical learners, and to help those in medicine achieve the potential that they are capable of. ■

Conflicts of interest

Laura Cheetham and Chris Turner are members of Civility Saves Lives campaign group. However, this article was entirely independent work by the authors and did not receive any input or review prior to publication from Civility Saves Lives members.

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**Address for correspondence: Dr Christopher Turner, University Hospital, Clifford Bridge Road, Coventry CV2 2DX, UK.
Email: chris.turner@uhcw.nhs.uk**