Critical Incident Techniques and Reflection in Nursing and Health Professions Education: A systematic narrative review

Alison Steven, PhD, RN, Gemma Wilson, PhD, Hannele Turunen, PhD, RN, M. Flores Vizcaya-Moreno, PhD, RN, Mina Azimirad, Jayden Kakurel, PhD, Jari Porras, PhD,
Susanna Tella, PhD, RN, Rosa Pérez-Cañaveras, PhD, RN, Loredana Sasso, MEdSc, RN,
Giuseppe Aleo, PhD, Kristin Myhre, PhD, RN, Øystein Ringstad, PhD, Arja Sara-Aho, RN,,
Margaret Scott, RN, Pauline Pearson, PhD, RN

Abstract

Background: The terms Critical Incident Technique (CIT) and Reflection are widely used but often not fully explained, resulting in ambiguity.

Purpose: To map and describe existing approaches to recording or using critical incidents and reflection in nursing and health professions literature over the last decade, identifying challenges and facilitating factors, strengths and weaknesses and discussing relevance for nursing education.

Methods: A systematic narrative review was undertaken. Medline and CINAHL were searched using MeSH terms, returning 223 papers (2006-17). After exclusions, 41 were reviewed.
Results:
Papers were categorised into three areas: those describing the development of an original tool or model, those where critical incidents or events were used as learning tools, and personal reflections on incidents.

Conclusions: Benefits have been identified in all areas. More attention is needed to the pedagogy of reflection, and the role of educators in reflection.

Keywords:
Critical incident technique, reflection, nursing, health professions, learning, clinical teaching methods

Introduction and Background
The use of critical incident technique (CIT) and reflecting on incidents has become widespread across nursing and the health professions - often linked to patient safety and education.\textsuperscript{1,2} However the terms ‘Critical Incident Technique’ and ‘Reflection’ are often used without clear explanation or definition, having become ‘received wisdom’ within nursing and healthcare education, research and practice - the assumption being one of shared understanding.

Such assumptions obscure diverse interpretations, adaptations, and methods of implementation, compounded by limited exploration of the purposes for which these techniques are employed and the ways in which they are operationalised. Norman and colleagues\textsuperscript{3} suggest the most appropriate unit of analysis is not the incident itself but the ‘happenings’ revealed by respondents reflecting on incidents. A clear overview of the use of these linked techniques is needed so researchers and educationalists can understand variations, use these as inspiration, be clear about strengths and
Since Flanagan’s seminal paper, the term ‘critical incident technique’ has become common across a wide range of industries, disciplines, and professions. Later studies incorporated additional questions regarding participants’ reflections and feelings. Butterfield and colleagues reviewed fifty years of CIT as a research method, noting further evolution and proposing the need to standardise terminology. Since that review, much additional literature employing variations of CIT has been published. One variation in nursing is the notion of a ‘significant event’ rather than critical incident, suggested as leading to better descriptions of the event. Such variations indicate the continued evolution and flexibility of CIT as a research technique, potentially both a strength and weakness.

A growing movement toward reflection on incidents saw participants asked to consider the meaning, personal importance and motivation. This paralleled a rise in the 1980s/90s of the idea of reflective practice as a process of articulating and making sense of professional activities in health and social care. Furthermore as ‘patient safety’ emerged as a growing field drawing heavily on the aviation industry, so the use of CIT and reflection have burgeoned and reflection has, like CIT, become a familiar term. The various ways in which ‘critical incident techniques’ and ‘reflection’ are enacted and the purpose of their use have been little explored, therefore we undertook a systematic narrative review to gather and analyse relevant literature focusing on the use of critical incident techniques and reflective practice in education for health professions.
The objectives of this narrative review were: to describe existing tools, models and approaches to recording critical incidents or learning events and reflection on these and to identify the challenges and facilitators and key components in each.

**Method**

A systematic narrative literature review was employed allowing inclusion of a wide range of literature, such as anecdotal evidence, qualitative and quantitative findings. The process shared some characteristics with a scoping study or rapid review but did not seek to appraise the quality of the evidence examined.

In December 2016 a systematic search over the past decade was undertaken in two databases, Medline and Cumulative Index of Nursing and Allied Health Literature (CINAHL), then repeated in December 2017 to identify newer papers. Search terms were Critical inciden* OR critical incident techniqu* AND Reflectio* OR learning. An information scientist helped with access to databases and the development of search terms and strings. The search deliberately omitted the term ‘patient safety,’ as this significantly reduced the number of potentially relevant hits, and did not result in additional papers. An initial search was carried out on the title and abstract only. A total of 223 papers were returned (see Supplemental Digital Content, Figure 1).

Inclusion criteria were English language only, academic journal articles with full-text, related to medicine, nursing, physiotherapy, occupational therapy, or social work and evaluated the use of CIT or reflection as a learning tool. Papers not meeting inclusion criteria, and duplicates, were excluded.

Papers were dispersed across paired members of the international team for full-text analysis. We used a data extraction form developed from an amalgamation of
previous work refined in international research group discussions. This allowed reviewers to systematically and consistently, review papers. Once all reviewers had analysed the papers, two authors discussed each data extraction sheet, and agreed papers appropriate for this review. A reference and citation search was carried out on all relevant papers with no further papers included. A total of 41 papers were included in the full review (Supplemental Digital Content, Figure 2). From initial data extraction, papers were categorised thematically in three areas: descriptions of the development of an original tool or model, critical incidents or reflection on events used as a learning tool, and personal reflections on critical incidents.

Findings

Paper characteristics

Twenty-four of the 41 retrieved papers were qualitative or quantitative research studies, eight described a model or tool used for data gathering in teaching or research, and eight were personal reflections. Most studies were carried out in the United Kingdom (n=12), and the United States (n=8). Others were from Australia, Belgium, Brazil, Canada, Cyprus, Finland, Ireland, Norway, South Africa, Singapore, Spain, and Sweden. Three of the studies were carried out in multiple countries: Norway and the United States, Canada, Estonia, Finland, Sweden and the United Kingdom, and Japan and the United Kingdom. Twenty-six studies related to nursing, six to medicine, four to physiotherapy, three to social work and two to occupational therapy.
Papers developing a tool or model

Two papers specifically described development of a tool (for use) or model (explaining how something works). Barksby, Butcher & Whysall described a new model of reflection entitled ‘REFLECT’. Menon aimed to develop and validate the PERFECT tool (professional evaluation and reflection on change tool), a standardised critical incident tool which explored change and reasons for change in professional practice. Both aimed to achieve a thorough, reflective process, with REFLECT being developed for student and practitioner reflection and PERFECT primarily as a research tool.

Papers using critical incidents or reflection on events as a learning tool

Thirty-two papers used CIT or reflection as learning tools in nursing and health professional education. Tools included written critical incident reports, semi-structured interviews, survey responses, and reflective essays. Some papers used multiple methods in collecting critical incidents: a reflective journal and focus group, a critical incident questionnaire and group interview, a combination of reflective journals, case studies, critical incident analyses, document analyses, and semi-structured interviews. Novel learning activities were also described, designed to support the reflection of undergraduate students using stories, art, and creative tasks. Findings from Solomon’s study illustrate the rewards students gained from listening to personal stories and experiences as part of a learning event, however, other evidence was limited, with few evaluation outcomes.
Studies were viewed as a process for generating and enhancing learning\textsuperscript{19} by optimising learning from real experiences,\textsuperscript{15,25} specifically, understanding the meaning of learning,\textsuperscript{9} development of critical thinking and reflection skills,\textsuperscript{5,13,21} and creativity\textsuperscript{5}. The use of reflection and CIT were also described as tools to benefit practice, specifically: making explicit their own assumptions,\textsuperscript{20} gaining clarity about the incident,\textsuperscript{5} reaching a positive outlook,\textsuperscript{5} for self-empowerment,\textsuperscript{5} for ownership of learning outcomes,\textsuperscript{5} dealing with ethical issues\textsuperscript{5}, cultural understanding,\textsuperscript{5,13,51} the development of reasoning,\textsuperscript{27} personal and professional awareness and behaviours,\textsuperscript{21,51} and in facilitating respondents’ reflection on communication.\textsuperscript{30}

Reflection was generally viewed as a positive process for learning. Concerns included student hesitancy in writing reflective documents\textsuperscript{20} and worries about the formality of written reflections\textsuperscript{42}. Student understanding of CIT in an online tool without the educator’s presence,\textsuperscript{34} and workload, especially overloading students with additional written work\textsuperscript{5} were considered barriers. Potential issues regarding accuracy were also noted, for example the impact of one or two months’ time lag after an event on participants’ ability to describe it in detail\textsuperscript{23}. Comparing reflection on past and current clinical events\textsuperscript{12}, reflection on current events appeared more beneficial, leading to enhanced motivation, self-efficacy, self-regulation, and turning learning into action. Other work highlighted difficulty in focusing on specific critical incidents\textsuperscript{30}. Despite the focus of CIT on significant events, recall often includes non-events and situations where more than one event merge in an individual’s mind\textsuperscript{25}. Accuracy was also questioned if individuals were aware of their journal being read by a faculty member.\textsuperscript{20}
Eight papers described personal reflections based on critical incidents. Four papers were reflections by the author, two papers report another person’s reflection, and one paper followed an ethnographic methodology with the reflection being observed and documented by a third person, in addition to interviewing clinicians and gathering audio-recordings of interactions. Seven papers utilized structured models of reflection: Gibbs, Johns, Schon, Smith and Russell, and Duke and Appleton.

The benefits of reflection were described as being empowering, motivating, bringing closure on traumatic incidents or conflicts and reducing bullying, interpersonal conflicts and horizontal violence. Reflection also allows people to question their own assumptions, closes the gap between theory and practice, and enhances understanding of professional conduct and the importance of consent. Authors advocated introducing reflection early in training and throughout the career, as well as valuing the educator or mentor’s role in reflection. It was not just about doing reflection, but understanding the underlying processes and purpose.
Limitations

The range of nationalities involved in this review was both a strength and a weakness, in our understanding of concepts. The inclusion of only English language sources means that other important material may have been excluded. Sources were all academic journal publications: inclusion of unpublished literature, may also have strengthened the review. A variety of tools, models and approaches were used in the studies examined. Tools were diverse. Studies used critical incidents or events in multiple ways with different or absent pedagogical approaches. Studies utilising reflection followed various models. Diversity and inconsistency make it harder to evaluate effectiveness.

Discussion

In nursing and in health care more generally the term critical incident has become closely linked to the field of patient safety. Safety-critical events focus on failures or malfunctions with serious consequences. Embracing this view may inhibit reflection on positive experiences or events from which much could be learned.

More attention is needed to the pedagogy of reflection – promoting an understanding of why we should reflect, and what the reflection is trying to do. It is important for students not just to think ‘we will reflect’ but ‘we will reflect in order to learn’. This point is drawn out, for example, in work on the use of reflection in interprofessional learning. In nursing, Rolfe has argued that reflective practitioners must ‘reassert the importance of experiential knowledge’ (p21). Another important issue is the role of nurse educators in prompting the reflective process – through offering alternative perspectives, otherwise potentially hidden from the student.
Conclusion

This paper has examined the use of critical incident techniques and reflection in literature on health professions over a decade. Papers have described the development of original tools or models, looked at the use of critical incidents for learning, and explored personal reflections on events. Benefits of using critical incidents and reflection on events in learning have been identified in all of these. However, the terminology used is diverse and the term ‘critical incident’ has negative connotations. Thus, future work needs to attend to the pedagogy of reflection, the role of educators in facilitating reflection and the use of positive experiences. With this, the further development of reflection on significant ‘learning experiences’ in the process of education for nursing and healthcare has huge potential for future practice.

References


