

Critical Incident Techniques and Reflection in Nursing and Health Professions Education

Systematic Narrative Review

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ABSTRACT

Background: The terms *critical incident technique* and *reflection* are widely used but often not fully explained, resulting in ambiguity.

Purpose: The aims of this review were to map and describe existing approaches to recording or using critical incidents and reflection in nursing and health professions literature over the last decade; identify challenges, facilitating factors, strengths, and weaknesses; and discuss relevance for nursing education.

Methods: A systematic narrative review was undertaken. MEDLINE and the Cumulative Index to Nursing and Allied Health Literature were searched using MeSH terms, returning 223 articles (2006-2017). After exclusions, 41 were reviewed.

Results: Articles were categorized into 3 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.

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: clinical teaching methods, critical incident technique, health professions education, nursing education, reflection

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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.^{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 health care 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 operationalized. Norman and colleagues³ 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 educators and researchers can understand variations, use these as inspiration, be clear about strengths and limitations of diverse uses of these techniques, and develop a shared language. This systematic narrative review aims to begin to fill that gap.

Since Flanagan's seminal article, CIT has become common across a wide range of industries, disciplines, and

professions.⁴ Later studies incorporated additional questions regarding participants' reflections and feelings. Butterfield and colleagues⁴ reviewed 50 years of CIT as a research method, noting further evolution and proposing the need to standardize 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.⁵ Such variations indicate the continued evolution and flexibility of CIT as a research technique, potentially both a strength and weakness.⁶

With a growing movement toward reflection on incidents,⁴ participants considered the meaning and personal importance to them. This paralleled a rise in the 1980s and 1990s 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, the use of CIT and reflection has burgeoned, and reflection has, like CIT, become a familiar term. We undertook a systematic narrative review⁷ to gather and analyze relevant literature focusing on the use of CITs and reflective practice in education for health care professions.

The objectives of this narrative review were to (1) describe existing tools, models, and approaches to recording critical incidents or learning events and reflection on these and (2) identify the challenges, facilitators, and key components in each.

Methods

A systematic narrative literature review was employed, allowing inclusion of a wide range of literature, such as anecdotal evidence and qualitative and quantitative findings.⁷ The process shared some characteristics with a scoping study⁸ 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 2 databases, MEDLINE and Cumulative Index to Nursing and Allied Health Literature, and then repeated in December 2017 to identify newer articles. Search terms were *Critical incident** 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 articles. An initial search was carried out on the title and abstract only. A total of 223 articles were returned (Supplemental Digital Content, Figure, <http://links.lww.com/NE/A738>). Inclusion criteria were English language only and academic journal articles with full-text related to medicine, nursing, physiotherapy, occupational therapy, or social work that evaluated the use of CIT or reflection as a learning tool. Articles not meeting inclusion criteria and duplicates were excluded.

Articles 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 work⁹⁻¹¹ refined in international research group discussions. This allowed reviewers to systematically and consistently review articles. Once all reviewers had analyzed the articles, 2 authors discussed each data extraction sheet and agreed on articles appropriate for this review. A reference and citation search was carried out on all relevant articles with no further articles included. A total of 41 articles were included in the full review (Supplemental Digital Content, Table, <http://links.lww.com/NE/A739>). From initial data extraction, articles were categorized thematically in 3 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

Article Characteristics

Twenty-four of the 41 retrieved articles were qualitative or quantitative research studies,¹²⁻³⁴ 8 described a model or tool used for data gathering in teaching or research,³⁵⁻⁴² and 8 were personal reflections.⁴³⁻⁵¹ Most studies were carried out in the United Kingdom (n = 12)^{17,21,22,25,28,30,32,35,40,44,49,50} and the United States (n = 8)^{14,19,26,27,31,39,41,45}. Others were from Australia,⁴⁶ Belgium,^{18,24} Brazil,³³ Canada,^{12,15,20,36,37} Cyprus,⁴³ Finland,¹³ Ireland,^{47,48} Norway,⁴² South Africa,⁵ Singapore,²³ Spain,²⁹ and Sweden.³⁴ Three of the studies were carried out in multiple countries: Norway and the United States³⁸; Canada, Estonia, Finland, Sweden, and the United Kingdom¹³; and Japan and the United Kingdom.¹⁶ Twenty-six studies related to nursing, 6 to medicine, 4 to physiotherapy, 3 to social work, and 2 to occupational therapy.

Articles Developing a Tool or Model

Two articles specifically described development of a tool (for use) or model (explaining how something works).^{35,36} Barksby et al³⁵ described a new model of reflection entitled "REFLECT." Menon et al³⁶ aimed to develop and validate the PERFECT tool (Professional Evaluation and Reflection on Change Tool), a standardized CIT, 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 reflection³⁶ and PERFECT primarily as a research tool.³⁵

Articles Using Critical Incidents or Reflection on Events as a Learning Tool

Thirty-two articles used CIT or reflection as learning tools in nursing and health care professional education.^{12-34,37-42,51} Tools included written critical incident reports,^{13,16,17,21,22,28,31,33,40,51} semistructured interviews,^{5,18,19,23-26,30,34} survey responses,²⁷ and reflective essays.⁴⁵ Some articles used multiple methods in collecting

critical incidents: a reflective journal and focus group¹⁵; a critical incident questionnaire and group interview²⁹; and a combination of reflective journals, case studies, critical incident analyses, document analyses, and semi-structured interviews.³² Novel learning activities were also described and designed to support the reflection of undergraduate students using stories, art,³⁹ and creative tasks.³⁷ Findings from Solomon's¹⁴ 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 learning¹⁹ by optimizing learning from real experiences,^{15,25} specifically, understanding the meaning of learning⁹ and developing critical thinking and reflection skills^{5,13,21} and creativity.⁵ Critical incident technique and reflection were also described as tools to benefit practice, specifically, making explicit one's own assumptions,²⁰ gaining clarity about the incident,⁵ reaching a positive outlook,⁵ for self-empowerment,⁵ for ownership of learning outcomes,⁵ dealing with ethical issues,⁵ cultural understanding,^{5,13,51} development of reasoning,²⁷ personal and professional awareness and behaviors,^{21,51} and facilitating respondents' reflection on communication.³⁰

Reflection was generally viewed as a positive process for learning. Concerns included student hesitancy in writing reflective documents²⁰ and worries about the formality of written reflections.⁴² Student understanding of CIT in an online tool without the educator's presence³⁴ and workload, especially overloading students with additional written work,⁵ were considered barriers. Potential issues about accuracy were also noted, for example, the impact of 1 or 2 months' time lag after an event on participants' ability to describe it in detail.²³ Comparing reflection on past and current clinical events,¹² reflection on current events appeared more beneficial, leading to enhanced motivation, self-efficacy, and self-regulation and turning learning into action. Other work highlighted difficulty in focusing on specific critical incidents.³⁰ Despite the focus of CIT on significant events, recall often includes non-events and situations where more than 1 event merges in an individual's mind.²⁵ Accuracy was also questioned if individuals were aware of their journal being read by a faculty member.²⁰

Articles Using CIT in Personal Reflection

Eight articles described personal reflections based on critical incidents.⁴³⁻⁵⁰ Five were reflections by the author,^{43,47-50} 2 articles report another person's reflection,^{38,39} and 1 article 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.⁴⁶ Seven articles used structured models of reflection: Gibbs,⁴⁸⁻⁵⁰ Johns,^{47,52} Schon,⁴⁵ Smith and Russell,^{43,53} and Duke and Appleton.^{44,54}

The benefits of reflection were described as being empowering,^{43,45,47} motivating,⁴³ bringing closure on traumatic

incidents or conflicts, and reducing bullying, interpersonal conflicts, and horizontal violence.⁴⁵ Reflection also allows people to question their own assumptions,⁴⁴ closes the gap between theory and practice,⁴⁷⁻⁴⁹ and enhances understanding of professional conduct and the importance of consent.⁴⁴ Authors advocated introducing reflection early in an educational program and throughout one's career⁴⁵ and valuing the educator's or mentor's role in reflection.^{43,45,49} It was not only about doing reflection, but also understanding the underlying processes and purpose.⁴⁵

Limitations

The range of nationalities involved in this review was both a strength and weakness in our understanding of concepts. The inclusion of only English language sources means that other important materials 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 utilizing reflection followed various models. Diversity and inconsistency make it harder to evaluate effectiveness.

Discussion

In nursing and 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 only to think “we will reflect” but “we will reflect to *learn*.” This point is drawn out, for example, in work on the use of reflection in interprofessional learning.⁵⁵ In nursing, Rolfe^{54(p21)} has argued that reflective practitioners must “reassert the importance of experiential knowledge.” Another important issue is the role of nurse educators in prompting the reflective process—through offering alternative perspectives, otherwise potentially hidden from the student.

Conclusions

This article examined the use of CITs and reflection in literature on health care professions over a decade. Articles described the development of original tools or models, examined 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 other health care students has huge potential for future practice.

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TEACHING TIP

Strategies to Maintaining Enthusiasm in the Classroom

As nurse educators, we may encounter students in the classroom who are not enthusiastic about the course content or teaching strategy. How do you maintain enthusiasm in the classroom? First, you must be passionate about the content you are teaching. When students realize that you are passionate about the subject matter, it inspires them to be motivated to learn the material. One simple way is by changing the tone in your lecture and showing excitement about the content. Even if you are not as passionate about a subject matter, you can still engage the students. Second, demonstrating that you sincerely care about the students' success goes a long way. One way to do that is by offering a short informal assessment of the class after week 3 of the course. This informal assessment incorporates 2 questions: "What is working for you?" and "What do you need more of?" The educator can make adjustments to align the course material and learning activities to student feedback. Examples of changes may include more engagement strategies, such as games, YouTube videos, and group discussions about the course content. Once these changes have been implemented, students feel even more inspired because they see that you take their suggestions seriously. Students become invested in the class and realize that their voice matters.

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TEACHING TIP

On This Day in Pharmacology History

Pharmacology instructors are usually tasked with teaching students about drugs that are used across the lifespan, head-to-toe, in 1 semester. Students enjoy opportunities to learn about specific drugs, because they are often concerned that they will not recognize or know about specific products in practice or on examinations. "On This Day in Pharmacology History" is an assignment that allows students to explore individual drugs and build confidence in their knowledge of broader drug classes. Students are instructed to visit the US Food and Drug Administration drug database (<https://www.accessdata.fda.gov/scripts/cder/daf/index.cfm>) and search for a drug by approval date. Students may select any date, such as their birthday or another special day in history. Then, students select 1 drug from the list and answer these questions: Is the drug still on the market? If not, why? What was the drug originally approved for? Has it since been used for other purposes? Students are also asked to identify the drug indications, adverse effects, contraindications, and nursing considerations from the course textbook. Students search for a recent research article involving the drug and summarize the work. This is an assignment that may be used at the start of a course to introduce students to foundational pharmacology concepts or at the end to draw on comprehensive knowledge. The assignment also allows students to recognize that, although they may not always know every drug on the market, their knowledge of an entire class of drugs may be applied to specific products.

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