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## The Critical Incident Technique (CIT) in Studying Health Care Professional–Patient Communication

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## The Critical Incident Technique (CIT) in Studying Health Care Professional–Patient Communication

### Abstract

Our study aimed to describe and evaluate the applicability of the critical incident technique (CIT) in qualitatively identifying the health-related outcomes of professional–patient communication. We described and evaluated the applicability of the CIT by analyzing previous CIT studies in the field of multidisciplinary health research, as well as conducting a study in which the CIT was applied. We based our description and evaluation on the qualitative research model developed by Carter and Little (2007). Our evaluation showed that in addition to defining the critical requirements of professional–patient communication in relation to specific outcomes, the CIT could be applied in defining the significance of the multidimensional nature of professional–patient communication. However, the successful use of the CIT requires correct epistemological, methodological, and method-related choices regarding the CIT’s application in the research frame and the type of information sought.

### Keywords

qualitative research, research methodology, critical incident technique, research evaluation, professional–patient communication, patient education, professional education

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# The Critical Incident Technique (CIT) in Studying Health Care Professional–Patient Communication

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Our study aimed to describe and evaluate the applicability of the critical incident technique (CIT) in qualitatively identifying the health-related outcomes of professional–patient communication. We described and evaluated the applicability of the CIT by analyzing previous CIT studies in the field of multidisciplinary health research, as well as conducting a study in which the CIT was applied. We based our description and evaluation on the qualitative research model developed by Carter and Little (2007). Our evaluation showed that in addition to defining the critical requirements of professional–patient communication in relation to specific outcomes, the CIT could be applied in defining the significance of the multidimensional nature of professional–patient communication. However, the successful use of the CIT requires correct epistemological, methodological, and method-related choices regarding the CIT’s application in the research frame and the type of information sought.

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## Introduction

In multidisciplinary health research, the most timely and problematic research questions focus on how to improve the overall well-being of the patient. In several studies, professional–patient communication has emerged as a key contributor to patient health, being implicated in many health-related factors such as patient satisfaction, patient empowerment, and making higher quality medical decisions (e.g., de Haes & Bensing, 2009; Epstein & Street, 2007). Multidisciplinary scholars have studied the health-related outcomes of professional–patient communication using a variety of research settings and methods, including quantitative self-report measures such as standardized scales in questionnaires and interviews (e.g., Ngenye & Kreps, 2020). However, studying the health-related outcomes of professional–patient communication has proven to be challenging because health is a multidimensional entity that can be viewed from many perspectives; it is also difficult to define which single communication factors may affect specific outcomes and how directly or indirectly they are mediated (e.g., Epstein & Street, 2007). Moreover, patients’ health is likely to be less influenced by specific communication characteristics and encounters than by care results and the cumulative outcomes of patients’ communication experiences over time in their multidimensional social environments (Street et al., 2009). In the present study, we describe and evaluate the critical incident technique (CIT) as a potential multidimensional qualitative research tool for application in studying the health-related outcomes of professional–patient communication.

### Critical Incident Technique (CIT)

The CIT is a qualitative research tool developed in industrial and organizational psychology. Flanagan (1954, p. 328), who first scientifically described the use of CIT, regarded the CIT as an outgrowth of studies in the Aviation Psychology Program of the United States Army Air Forces, which was established to develop procedures for the selection and classification of aircrews in World War II. After the war, some psychologists in the program established a new research institute (the American Institute for Research), where the CIT was first developed.

The CIT focuses on human behaviors in natural settings rather than on the opinions of participants what is critical in human behavior in specific situations. The CIT has been frequently used to explore what people in a certain activity or profession should do—or not—to have the best chance of achieving their goals (Viergever, 2019). The CIT is implemented through five phases: (1) distilling a study's general aims into a brief statement, (2) making plans and specifying what factors should be focused on, (3) systematically collecting data by enabling informants to recall in detail what kinds of behavior facilitated or impeded the examined activity, (4) analyzing data by focusing on the incidents and their contributing factors, and (5) interpreting data and reporting the results in such that they can be effectively used for many practical purposes (Butterfield et al., 2005; Flanagan, 1954). Thus, the CIT considers the entire research process and can be used to guide the many choices required in this process (e.g., study focus, unit of analysis, form of the data collection, data analysis strategies, and written report). However, the CIT does not consist of a strictly defined series of rules. Flanagan defined the technique as “a flexible set of principles which must be modified and adapted to meet the specific situation at hand” (1954, p. 335).

The CIT has been applied across a wide range of disciplines, such as psychology (e.g., Butterfield et al., 2005), social services (e.g., Doherty & DeWeaver, 2002), business science (Gremler, 2004), and communication studies (e.g., Pariera & Turner, 2020; Query & Wright, 2003; Ruben, 1993). The CIT has also been utilized in the fields of nursing science and medicine, along with in studying the ethical dilemmas in care (e.g., von Post, 1996; Wolf & Zuzelo, 2006), the critical requirements of specific professions (e.g., Wagner, 1950), patient education related to treatment measures (e.g., Kelo et al., 2013), and safety in clinical care (e.g., Strid et al., 2021). Moreover, the CIT has been used as a reflective tool to support the development of health care professionals and students in their work (Graybill et al., 2017; Keatinge, 2002; Rademacher et al., 2010; Steven et al., 2020).

The CIT has also been increasingly utilized to examine the quality and health-related outcomes of care from the perspective of patients, informal care givers, and health care professionals (e.g., Grant et al., 1996; Kempainen, 2000; Norman et al., 1992). Usually, the focus has been on clarifying what different elements have either facilitated or impeded the successfulness of the studied care situations. Promotional and inhibitory factors have been linked to, for example, clinical facets of treatment, organizational, staff and facility resources, and quantity of information. In addition, professional–patient communication has been stated to be one of the most central dimensions when studying the quality and health-related outcomes of care, especially as evaluated by patients and informal care givers (e.g., Ruben, 1993; Wennmann et al., 2021). Thus, the CIT has also been used when clarifying the critical elements of professional–patient communication in relation to patients' health-related outcomes (e.g., Björklund & Fridlund, 1999; Ivarsson et al., 2004; Wendt et al., 2004; Wong-Wylie & Jevne, 1997). However, most studies have focused on professionals' communication behaviors, with far fewer analyzing professional–patient communication and its outcomes from the perspective of interpersonal communication. From this perspective, the focus is not on individual acts of communication by individuals, but rather, it is on a relational process shared by both the

involved interlocutors, who are able to generate shared meanings and accomplish situation- and relationship-related goals through creating verbal and nonverbal communication messages (Burlison, 2010). The tendency to focus on professionals' communication behaviors in CIT studies has sparked our interest regarding whether the technique could be applied when qualitatively studying the health-related outcomes of professional–patient communication from patients' perspectives so that the patients' reflections related to the significance of their own behaviors are also considered. Thus, the interpersonal approach also can show whether the CIT could be applicable not only for professional use, but also for developing patients' interpersonal communication competence.

### **Objective of the Study**

In the current study, we described and evaluated the applicability of the CIT in studying professional–patient communication and its health-related outcomes through the original description of the CIT (Flanagan, 1954) and technique-related multidisciplinary reviews. In addition, we considered the CIT studies handling the health- or health care quality–related outcomes of health care situations from either a professional or patient perspective. We searched suitable articles from the Ebsco, Cinahl, Medline, and PubMed databases. We considered only peer-reviewed studies where the CIT was applied based on Flanagan's (1954) original description.

We described and evaluated the CIT by utilizing Carter and Little's (2007) model for evaluating qualitative research. In this model, qualitative research is structured by those choices related to epistemology, methodology, and method that are made throughout the research process. The CIT and its applications have usually been described and evaluated as a method, technique, or tool for conducting research (e.g., Butterfield et al., 2005; FitzGerald et al., 2008; McDaniel et al., 2020; Schluter et al., 2008). The CIT has also been described and evaluated as a methodology because of its influence on the design of a research setting, such as the selection of data collection and analysis methods (e.g., Viergever, 2019). Interestingly, the CIT has also been described as both a method and methodology, as Flanagan (1954, p. 327) himself did in his own description. Thus, there has been a lack of agreement regarding whether the CIT is understood as a method or methodology—or neither (Bradbury-Jones & Tranter, 2008). This lack of consensus has made it difficult to understand the philosophical assumptions of the CIT and to apply and compare previous studies that have utilized the CIT (e.g., Bradbury-Jones & Tranter, 2008; Viergever, 2019). Thus, instead of accurately classifying the CIT as a method or methodology and, thus, being restricted to this perspective, our study provides insights into whether it is possible to find a more structured way to describe and evaluate the CIT as a framework and to do so from various perspectives.

The CIT and its applications have usually been described and evaluated in the context of analyzing the reliability of CIT studies and from the perspective of what should be generally considered in the design of a CIT study. However, the perspective on how the researcher faces and decides in practice specific epistemological, methodological, and method-related solutions at different stages in the conduct of an individual study has so far been little considered (e.g., McDaniel et al., 2020). Thus, we also evaluated the applicability of the CIT through one qualitative study conducted by us, where the CIT was applied. The study is the first author's dissertation study, through which she has familiarized herself with the CIT. The second author is a supervisor and a professor in the field of communication studies and the third author is a supervisor and professor in the field of nursing science. Because the study has a multidisciplinary approach, it was also natural to apply but also to describe and evaluate the CIT through multidisciplinary health research.

The aim of our study was to describe and understand how patients' significant interpersonal communication experiences with health care professionals were related to type 2 diabetes management. We studied professional–patient communication retrospectively by examining diabetic patients' experiences of care discussions that occurred with doctors or nurses and that facilitated or impeded diabetes management. In the current study, professional–patient communication has been defined as interpersonal communication in which professionals and patients were engaged in the same communication system and where they constructed meanings via verbal and nonverbal communication related to care, care relationships, health, illness, and health as a way to accomplish situation- and relationship-related goals (e.g., Beebe et al., 2008; Burleson, 2010; Watzlawick et al., 1967). Diabetes management was defined as a complex task involving meal planning, medication, foot care, exercise, self-monitoring, emotion management, and collaboration with health care professionals (e.g., Barlow et al., 2002; Ingadottir & Halldorsdottir, 2008; Moser et al., 2008). We collected research data using an open survey and semi structured interviews. We analyzed the data using qualitative content analysis and contrapuntal analysis based on relational dialectics theory (Baxter, 2011). Before starting the data collection, we obtained approval from the Regional Ethics Committee.

### **The CIT and Perspective of Epistemology**

When describing and evaluating the epistemological basis of the CIT, attention has been drawn to clarifying the conception of knowledge: how information is seen to be constructed and, especially, how participants and researchers contribute to knowledge construction. In the context of epistemology, it is also essential to conduct axiological reflection because epistemology is always linked to individual and cultural values (Carter & Little, 2007). For this reason, to clarify the process of the construction of knowledge, we found it important to consider what kind of knowledge has been valued in the CIT description of Flanagan (1954) and its applications in the multidisciplinary field of health research and how knowledge-related valuations affect the conduct of practical research.

### **The Value and Construction of Knowledge**

In both the original description of the CIT and studies that have applied the CIT in the multidisciplinary field of health research, there has been an appreciation of the production of pragmatical information that makes it possible to solve practical problems and develop practices in everyday life (Flanagan, 1954; Kemppainen, 2000). Thus, knowledge has been thought to be pragmatically significant when it is proven in practical use (Viergever, 2019). In CIT studies, this kind of pragmatical information has been shown to be dichotomic because studies have tended to consider the factors that facilitate or impede the activities under consideration (e.g., Schluter et al., 2008; Viergever, 2019). Moreover, in the field of multidisciplinary health research, it has also been stated that the “common attribute of the CIT is that it elicits aspects of best and worst practices” (Byrne, 2001, p. 537).

Instead of the nature of the knowledge to be valued, more diverse questions have been brought about who has the knowledge and how the researcher and research participants relate to each other in constructing this knowledge. According to Flanagan's (1954) description of the CIT, relevant information should be gathered from those who have assessed the activities through their observations. In some studies, the participants have been researchers or individuals who do not themselves participate in the activity under review but who instead observe situations based on the guidance they have received beforehand. In this case, the information can be constructed by the observers now the observations are made. This type of

knowledge construction refers to a positivist or postpositivist conception of knowledge in which knowledge can be thought to be accessible mainly through sensory perceptions (e.g., Viergever, 2019).

On the other hand, Flanagan (1954) Also presented studies in which observers of the situation have participated in the activities under review and who have evaluated their findings retrospectively. In this kind of research setting, knowledge seems to be constructed through reflection shaped by subjective and context-related meanings, beliefs, opinions, or feelings, which has been a typical approach in recent CIT-applied health research studies (Butterfield et al., 2005). Thus, CIT studies seem to have been developed from a positivistic conception of knowledge toward interpretive conception knowledge, where the studied incidents have been seen as more subjective and context-related phenomena (see McDaniel et al., 2020; Viergever, 2019). Despite the emphasis on the interpretive construction of knowledge, the CIT still enables research settings to be established based on both positivistic and interpretive philosophical assumptions, which could be seen as its strength. However, the flexible epistemological approach requires researchers to include knowledge perceptions so that the reader can understand the ways in which a researcher participates in the construction of knowledge (Viergever, 2019).

Interestingly, no matter how the participants are seen within the observed situation, the relationship between the researcher and participant has been something explored both Flanagan's (1954) article and in health research studies in the same kind of ways: the researcher's task is to collect all relevant information from the participants and transfer it into an exploitable form through subjective analysis. Flanagan also recognized that "the incidents must be studied in the light of relevant established principles of human behavior and of the known facts regarding background factors and conditions operating in the specific situation" (1954, p. 335). Thus, a study can never be fully inductive; instead, it inevitably includes the knowledge-related interpretation of the researcher. However, in health research studies where the interpretive construction of knowledge has been merely emphasized, there has been limited open reflection on what the role of researcher is when defining the critical incidents—especially when structuring the knowledge of the significance of a studied action: Do the participants structure it by themselves in the study situation, or is it interpreted because of interpersonal communication between the participant and researcher?

### ***Our Application***

The study that we conducted also took advantage of the possibility of establishing a research setting based on a diverse epistemology. The initial assumption of knowledge formation was that the knowledge of professional–patient communication and its diabetes management–related outcomes is formed based on situations where patients have self-assessed the facilitating and impeding significance of practical functioning. Here, the concepts of knowledge formation in our study were linked to pragmatism. However, analysis of the patients was thought to consist of individual interpretations, which are considered in conceptual, experiential, and cultural frames. For this reason, our study was linked not only to pragmatism, but also to hermeneutics, where the interpretation of details is considered to influence the interpretation of the whole and where reinterpreting interpretations of the subject produces an ever-expanding understanding of the subject.

In addition to hermeneutics, constructivist knowledge perception was applied in our study. We were involved in building knowledge not only by interpreting the participants' descriptions of professional–patient communication, but also by influencing the participants' interpretations, such as through method choices, question layouts, and our own communication behaviors with participants. The extent to which we would participate in the creation of

knowledge concerning the significance of a studied action was left to be clarified during the research process. Thus, the central advantage of the CIT approach was that the understanding of the structure of knowledge was allowed to develop as the research proceeded.

Because we considered the construction of knowledge to be a flexible and dynamic process, there was a need for epistemological anchor. In our study, the anchor was axiology; the direction of the study was revised according to what kind of knowledge we valued and how it would be best accessed. Because we understood professional–patient communication as a phenomenon that can both facilitate and hinder patients' type 2 diabetes management, we did not look at only positive or only negative factors of interaction, but what dimensions of professional–patient communication both facilitated and impeded diabetes management. Thus, the valued knowledge was seen as being built in our study on cross-pull between “counterforces”: one must look at both the functional and nonfunctional actions to obtain in-depth information about the examined action. However, we did not consider it appropriate to make the dichotomous setting visible in the research objective because we wanted to leave open the possibility of examining the professional–patient communication and its relation to diabetes management from a non-dichotomous frame. Thus, during the research process, we regularly considered the perspectives from which it would be reasonable to study the relationships between professional–patient communication and type 2 diabetes management. This solution proved to be workable because the research data were eventually handled by us in three separate sub studies, two of which had a dichotomic research setup (Peltola et al., 2018; Peltola et al., 2021). Thus, instead of emphasizing the dichotomic setting in the research aim, the most important question when applying the CIT might be how the dichotomic setting could be utilized in the most appropriate way to achieve the research aim when collecting and analyzing the research data and structuring the main results.

### **The Epistemological Core of Critical Incidents**

Valuing dichotomous knowledge was not the only axiological choice that has to be made in CIT studies. The central question is also what kind of information may specifically facilitate and impede practical activity—that is, how a critical incident is understood (e.g., Schluter et al., 2008; Viergever, 2019). In the original description of the CIT, a critical incident was defined as a human behavior–related critical requirement or element that facilitated or impeded the success of the action under review. According to Flanagan, the term incident refers to “any observable human activity that is sufficiently complete in itself to permit inferences and predictions to be made about the person performing the act” (1954, p. 327). The term critical denotes that an “incident must occur in a situation where the purpose or intent of the act seems fairly clear to the observer and where its consequences are sufficiently definite to leave little doubt concerning its effects” (p. 327).

Following Flanagan (1954), the CIT has been applied in multidisciplinary health research focusing on studying human behavior, particularly in health care professionals. However, the definition of a critical incident has expanded from a focus on human behavior to single situations and events or larger entities within which critical elements or requirements are considered (e.g., Viergever, 2019). Furthermore, some studies have characterized situations as those being significant, revelatory, and unexpected (e.g., Koponen et al., 2000; Norman et al., 1992; Schluter et al., 2008). Because of the specific, reflection-promoting nature of a situation, the events under consideration need not have happened recently. Indeed, the relevance of knowledge is preserved and structured over time, and descriptions of situations have begun to be collected even after an extended passage of time (e.g., Graybill et al., 2017; Norman et al., 1992).

Previous studies have also considered whether critical incidents should be studied as single incidents or as larger entities. For example, Butterfield, Borgen, Maglio, and Amundson (2009) proposed an enhanced version of the CIT (ECIT) that prescribes the additional collection of contextual information and views on “wish list items” (i.e., care that was not present but would have been helpful). This type of question format has some commonalities with Norman et al.’s (1992) article, in which the authors were especially interested in the events revealed by respondents reflecting on incidents. Thus, instead of single observations, situations, or experiences, critical incidents could also be understood as being constructed over time as a result of several experiences instead of single situations—and by looking to the future, reflections about situations that have already occurred can also be elucidated.

### ***Our Application***

In our study, the focus was not merely on human behaviors or situations, but instead, it was on professional–patient communication, which we defined as interpersonal communication. However, because we found the term discussion to be easier for patients to understand than the term professional–patient interpersonal communication, we described the incidents as professional–patient discussions. We also considered whether the studied professional–patient discussions should be studied in the context of single professional–patient communication situations and characterized as specific discussions. Initially, we had reservations about these restrictions because each discussion could be considered as having a distinct significance in the treatment history of patients with long-term illnesses. Furthermore, previous studies have shown that patients easily combine different care experiences in their minds and using adjectives that emphasize the specificity of the discussion or event could confuse participants and do not necessarily add value (e.g., Bradbury-Jones & Tranter, 2008). However, certain discussions or even individual statements (e.g., memorable messages) may have more significance for patient well-being than others (e.g., Gustafsson et al., 2013; Knapp et al., 1981). Because we specifically aimed to clarify whether such professional–patient discussions also occurred in the treatment of type 2 diabetes, the term significant was deemed appropriate (Schluter et al., 2008).

Overall, the focus on single significant professional–patient discussions was successful, allowing for studying both new and older experiences, even those that occurred 28 years ago. Moreover, describing the discussions as significant did not seem to restrict the study participants from recounting both conventional and extraordinary treatment discussions. Instead, the term significant implied that even the most ordinary professional–patient discussions, such as regarding care equipment, could be significant for the patients’ diabetes management. Although it was also found that some of the patients had difficulty focusing on single professional–patient discussion because their responses evolved into describing long-term care relationships or diabetes treatment experiences in general, the patients were also able to distinguish from their care histories those discussions that were more significant, here in a positive or negative sense. We found studying such discussions as valuable because the information the patients provided made it possible to consider what kind of discussions patients themselves perceived as relevant in relation to the diabetes management and how such discussions could be constructed more often in care situations.

Although the focus of our study was on significant professional–patient discussions, we named critical incidents as significant interpersonal communication experiences. This concept of experience was intended to highlight the patients’ interpretations of the significance of facilitating and impeding professional–patient communication regarding type 2 diabetes management. In addition, we wanted to emphasize the importance of reflection-based experiential knowledge in developing type 2 diabetes care practices. However, designating a

critical incident as an experience was not the most appropriate solution because it was difficult to use several concepts in parallel, such as the experience, incident, and communication situation within which the professional–patient discussion was examined. Although it was important to consider professional–patient communication within an experience, it was not necessary to regard the critical incident as an experience. The most expedient solution might be to use the original term critical incident and define it in each study so that the researchers can avoid muddling terms. This solution would also promote the evaluation and comparison of studies that utilized the CIT (e.g., Bradbury-Jones & Tranter, 2008). Noteworthy is that if research data are utilized in several sub studies, it would be reasonable to define a critical incident as a situation instead of a critical requirement or element of a specific activity, thus allowing it to be seen in a wider frame of analysis within which it is possible to view more narrowly the discussion and its features. This selection is in line with Flanagan’s (1954) original description of the CIT, according to which incidents are seen as situation-based elements.

### **The CIT and the Perspective of Methodology**

When considering the methodology of a study, the compatibility of the research objectives and methods is usually examined. Carter and Little (2007) approached methodology much like Kaplan (1964, p. 18), who stated that methodology is “the study—the description, the explanation, and the justification—of methods, and not the methods themselves.” In the current article, we described and evaluated the methodology of the CIT by focusing on the relationship between the research aims and methods recommended by Flanagan (1954) and used in previous CIT studies in the field of multidisciplinary health research. Moreover, we described and evaluated the justification of the methods retrospectively by analyzing how successful the chosen methods were proven to be in our study.

### **Defining the Research Aim**

Although CIT study is recommended to be done inductively, a clear research aim—in particular, in relation to which facilitating and impeding factors are considered—has been found to be important because this has been considered to facilitate collecting the simple types of observation concerning the selected activity (Flanagan, 1954). The same trend has also been seen in multidisciplinary health research studies that have explored in more detail the outcomes of professional–patient communication—such as health promotion (Björklund & Fridlund, 1999), experiencing hope (Wong-Wylie & Jevne, 1997), receiving social support (e.g., Ivarsson et al., 2004), and increasing trust and confirmation (e.g., Wendt et al., 2004).

### ***Our Application***

Compared with previous CIT applications in the field of multidisciplinary health research, our study was exceptional precisely in terms of study design; the critical elements of professional–patient communication and desired outcomes of professional–patient communication was not precisely defined in advance, but our study approached both aspects inductively. Previous studies have shown that diabetes management can be understood in many ways (e.g., Ingadottir & Halldorsdottir, 2008). Thus, we considered that the concept in question would also be best to define in a patient-oriented manner. Both the characteristics and outcomes of professional–patient communication was, however, difficult to examine inductively because they overlapped in the patients’ experiences in a variety of ways. For example, it was difficult to determine whether building trust in the other party was a characteristic of significant

professional–patient communication or if it was one of the diabetes managements–related outcomes of significant professional–patient communication. On the other hand, a broad inductive examination allowed for the multidimensionality and dynamism of the professional–patient communication to become more apparent—as well as its relevance as a treatment-promoting factor—and to become a key outcome of care situations that are usually constructed in interaction between a professional and patient. In a future study, however, the questions could be developed according to Björklund and Fridlund’s (1999) study, where the participants were asked to describe significant discussions in which coping with stress, nutrition, or exercise was the main subject. In this case, it would be possible to look at the outcomes of professional–patient communication in a more precise way, but also comparatively, considering the diversity of the communication. Moreover, these kinds of questions might be better aligned with the original CIT (Flanagan, 1954), which requires the researcher to define as specifically as possible in phase one (general aim) the studied action regarding its facilitating and impeding factors.

### **Selecting the Data Collection Methods**

Flanagan (1954) mentioned observations, individual and group interviews, surveys, and writings as possible data collection methods in CIT studies. These recommendations may be explained by the fact that all these methods allow critical incidents to be viewed directly in a situation or retrospectively. The same methods have also been used in CIT applications implemented in the field of multidisciplinary health research when studying the outcomes of professional–patient communication, either individually or in combination with other methods. The most popular data collection methods have been semi-structured interviews (e.g., Björklund & Fridlund, 1999; Eriksson et al., 2016), focus group interviews (Krupić et al., 2019), and inscriptions (e.g., Wolf & Zuzelo, 2006). Interviews have been both face-to-face and telephone interviews. The participants have either written their narratives themselves or audio-recorded their narratives, and the researcher has transcribed them into text. In some studies, the researchers have also used direct observations as a data collection method (e.g., Keatinge et al., 2000).

### ***Our Application***

In our study, we selected an open survey and semi-structured interviews as methods of data collection. Both methods have proven to be useful when examining interactions from a retrospective perspective (e.g., Bradbury-Jones & Tranter, 2008). In addition, these methods have been considered as making it possible to properly bring out the study participants’ voices and look at their experiences from multidimensional perspectives. Because it was unclear how diabetic patients would reflect their experiences with health care professionals, we selected two distinct methods to determine the relevance to descriptions of experiences: an open survey, in which the individual participants had the possibility to reflect alone, and interviews, in which reflection occurred with the researcher. The open survey and semi-structured interviews were separate ways of collecting data. Thus, we did not aim to involve the same individuals in both forms of data collection. We first conducted the open survey using an e-form program provided by the university. After collecting the research data through open surveys, we conducted semi-structured interviews face to face.

The open survey, in which the patients wrote about their experiences, was a partially successful method choice. We received only a few answers (N=16), which mostly had limited content. Moreover, three answers had to be excluded from the research data because the response forms were left nearly empty. However, the data collected in the open survey provided

valuable insights into how difficult it was for the patients to reflect on professional–patient communication and its outcomes from the perspective of interpersonal communication because most of the responses focused on describing the behavior of the professionals. The same difficulty emerged at the beginning of the semistructured interviews (N=25), but it was possible to assist the participants in extending their descriptions of experiences by asking specific questions. However, it was surprising that in some interviews, the participants' views of their own experiences began to be structured deeply. This change occurred especially in the context of negatively perceived discussions. In the interview discussions, some participants began to consider the significance of their own activities, as well as the perspective of the health professionals. One participant described a change in his thinking at the end of the interview:

Perhaps, I could add now that I don't want to judge the professional, that he did his job for sure. So please don't put a terribly big minus after him. ... Maybe at that time, he didn't have either enough information about what kind of illness type 2 diabetes is.

It was also notable in the semi-structured interviews that the further the interviews progressed, the more smoothly, in more detail, and with more enthusiasm the patients described the discussions they had with health care professionals. Moreover, after the interviews, some participants seemed to be more relaxed and willing to verbalize their thoughts about their type 2 diabetes management–related experiences. Norman et al. (1992) reported that the most important incidents emerged after the interview, which may have been the result of increased trust between the participant and researcher, or that the conversation might have enabled the participants to think about their experiences in a more specific way. Thus, it seems that warming up the participants might provide deeper and rich research data. In the future, it would be important to consider how it would be possible to support the participants' reflection in the most appropriate way. Perhaps, a focus group interview or semi-structured interview could serve as a warm-up to address the topic, and then, it would be reasonable to gather additional research material by using writings or in-depth interviews. This kind of research setting would also make it possible to find out how patients' experiences of the significance of critical incidents are formed when the experiences of the same persons are approached using two different data collection methods.

### Selecting the Analysis Methods

According to Flanagan, the purpose of data analysis is to “summarize and describe the data in an efficient manner so that it can be effectively used for many practical purposes” (1954, p. 344); he recommended using inductive analysis methods to give central weight to participants' descriptions. Inductive analysis methods have also been used in multidisciplinary health research studies where the CIT has been applied (e.g., Bradbury-Jones & Tranter, 2008). Studies have used, for example, inductive thematic analyses (e.g., Larsen et al., 2020; Schluter et al., 2008; Strachan et al., 2018). In addition, other inductive qualitative analysis methods have been used, such as the hermeneutic text interpretation (e.g., Hejkenskjöld et al., 2010), different forms of content analysis (e.g., Wong-Wylie & Jevne, 1997), and grounded theory (Jackson & Stevenson, 2000). To some degree, theory-related analysis methods have also been used in studies in which the CIT has been applied (e.g., Striley & Field-Springer, 2016).

### ***Our Application***

In our study, we used inductive qualitative content analysis in two sub studies because the method has been found to be effective in identifying critical processes (Lederman, 1991) and in developing an understanding about the meaning of communication in the health care context (e.g., Cavanagh, 1997). However, in terms of describing the diversity of patients' significant interpersonal communication experiences, inductive content analysis may not have been the best analysis method because the information is usually structured through the method in a concise form to obtain a clear description of the phenomenon under study. Although the information provided by the research data is not lost in content analysis and the fact that the method made it possible to focus our analysis more closely on professional–patient communication and its relation to diabetes management, possibilities to focus especially the diversity of the situation-related factors of single critical incidents was limited. In the future, thematic analysis would perhaps more comprehensively describe the complexity of professional–patient communication and its multidimensional relationships with contextual factors and outcomes.

Our study also utilized theory-related contrapuntal analysis, which is a form of discourse analysis that can be used to identify how different kinds of reality-related meanings are created in the interaction between the discourses through language use (Baxter, 2011). This analysis method was an atypical choice because discourse analysis has rarely been used in studies that have applied the CIT. Usually, researchers have focused on the studied activity and its facilitating and impeding critical requirements. Far fewer researchers have been interested in the word choices the participants use to describe critical incidents, especially what kind of understanding of reality these descriptions indicate. In our study, the use of contrapuntal analysis made it possible to look at critical incidents and professional–patient communication from a non-dichotomous perspective. This kind of analysis revealed that critical incidents are not voids; rather, they are incidents that also include different (also competing) discourses linked to the social and cultural framework that affect the formation and meaning making about critical incidents, for example, how the illness or professional–patient relationship are understood and how this kind of understanding is built and then affects professional–patient communication (e.g., Peltola & Isotalus, 2019). Thus, it might be reasonable to conduct more than one substudy including different kinds of analysis from critical incident data so that various levels of critical incidents could be seen and combined in a way that would shed light on the diverse nature of the studied incidents.

### **The CIT and the Perspective of the Method**

According to Carter and Little (2007), the method is at the core of the implementation of research. Using these methods makes visible the epistemological and methodological premises of the study through data collection, data analysis, and interpretation of the results. Each of these phases is discussed in the following subsections.

### **Data Collection**

According to Flanagan (1954), in addition to choosing the appropriate data collection method, designing the questions asked of the participants is the most crucial aspect of the data collection procedure because a slight change in wording can produce a substantial change in the way the incident is reported. He recommended designing the questions in line with the general aim of the activity and carefully considering the phrasing of the questions; for example, it is a different matter to ask, “how he behaved” instead of “what he did.” The multidisciplinary

health research studies in which the CIT has been applied have also contributed to the comprehensible formulation of the questions. However, there has been variation in how positive and negative critical incidents have been approached using questions. For example, Wong-Wylie and Jevne (1997) asked participants in the first data collection session to describe their experiences of interactions with doctors who influenced their hope. Some studies have asked only positive or only negative critical incidents (e.g., Strid et al., 2021; Wolf & Zuzelo, 2006), and some studies have asked separately both positive and negative incidents (e.g., Eriksson et al., 2016; Jackson & Stevenson, 2000; Strachan et al., 2018; Wendt et al., 2004).

### *Our Application*

In our study, we based the interview questions on earlier CIT studies that included guidelines for the formulation of questions and concrete examples of them (e.g., Flanagan, 1954; Kemppainen, 2000). We tested the questions for the open survey and the semi-structured interviews with acquaintances with chronic illnesses. Furthermore, we assessed the questions by presenting them to the Regional Ethics Committee. Instead of behaving and doing, we decided to use the verb “act,” which allows for a review of behavior, communication, and doing. However, this may have been too vague wording because in the semi-structured interviews, there was a clear need for help with those questions directing the participants’ focus on professional–patient communication. In the future, it might be appropriate to talk about communication and interaction at the level of questions asked from the participants and to justify the choice of perspective to the participants more clearly in advance.

Both in the open survey and semi-structured interviews, we decided to ask about the positive and negative experiences of the patients but in a slightly different way. Because the open survey aimed at being as concise as possible, we asked the respondents to describe only one positive and/or negative physician experience and one positive and/or negative nurse experience in relation to type 2 diabetes management. For the same reason, the number of help questions was also limited. An example of one question presented in the open survey is given in Table 1.

Table 1  
*Questions Asked in the Open Survey*

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Think about one doctor–patient discussion that has had a positive impact on type 2 diabetes management, according to your experience. Please describe as accurately as possible what happened during the discussion. You may use the sub questions below to describe the discussion:

- In what year did the discussion happen?
- Was the doctor familiar to you?
- How long had you had type 2 diabetes before the discussion?
- How was type 2 diabetes managed in everyday life before the discussion?
- What was the topic of the discussion?
- What happened during the discussion?

Please describe the course of the discussion, the content of the discussion, and the discussion atmosphere.

- What factors made the discussion a particularly significant experience?
  - How did the discussion affect type 2 diabetes management, according to your experience?
  - How long-term have the effects of the discussion been on type 2 diabetes management?
-

The frame of the semi-structured interviews contained the same types of questions as the open survey, but we allowed the participants to share as many experiences as they wanted. In the interviews, we also presented supplementary questions to the participants on the nature, significant features, and diabetes management–related outcomes of the described discussions. Although we studied single discussions, at the end of the interviews, we decided to ask the patients to describe their wishes related to professional–patient discussions based on the ECIT technique (see e.g., Butterfield et al., 2009) to see how this approach would work in our CIT study. The questions asked in the semi structured interviews are presented in Table 2.

Table 2

*Questions Related to the Patients' Significant Interpersonal Communication Experiences in the Semi-Structured Interviews*

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**Theme 1: The characteristics of the patients' significant interpersonal communication experiences**

Think about one or more doctor–patient and/or nurse–patient discussions that you feel had either a positive or negative impact on your type 2 diabetes management. Please describe the discussion as accurately as possible.

- In what year did the discussion happen? Did it happen face to face or over the phone?
- Was the health care professional familiar to you?
- How long had you had type 2 diabetes before the discussion?
- What was the topic of the discussion?
- How did the discussion proceed? Please describe, for example, the course of the discussion and the content.
- How did the health professionals act in that situation? How did you act?
- What was the atmosphere in the discussion? Why?

**Theme 2: The significance of communication factors in type 2 diabetes management–related interpersonal communication experiences**

In your opinion, what factors made the professional–patient discussion a particularly positive or negative experience? Did relevant factors relate, for example, in some way to:

- the actions of the health care professional?
- your own actions?
- to the topic or content of the discussion?
- the timing of the discussion and the current status of type 2 diabetes management?

**Theme 3: Type 2 diabetes management–related outcomes of significant interpersonal communication experiences**

How do you think the discussion has affected type 2 diabetes management? Has the discussion, for example, been affected by:

- your satisfaction with the activities of health care professionals?
- mutual interactions with health care professionals?
- adherence to treatment guidelines (e.g., diet and exercise habits, regularity in taking medications, monitoring blood glucose, etc.)?
- your participation in peer support/diabetes association activities?
- your physical and psychological well-being?

In your opinion, how long-term have the outcomes of the discussion been? Why do you think so?

**Theme 4: Differences between significant interpersonal communication experiences with doctors and nurses**

If you have had discussions with both a doctor and nurse, what similarities and differences have you had in these discussions? (e.g., were there differences in the length or frequency of discussions, communication behaviors, talking points, or ease of talking with them?)

What could the possible commonalities and differences between doctors and nurses be attributed to, according to your own experience?

**Ending the interview**

Would you like to comment on the kinds of discussions you would like to have with health care professionals in the future in relation to type 2 diabetes management?

Would you like to elaborate on or add something to our discussion, such as something I haven't asked about?

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Both the open survey and semi-structured interview questions worked well because the participants seemed to understand them well, and both positive and negative doctor–patient and nurse–patient discussions were described. It has been stated that in general, patients are more likely to recall negative rather than positive interaction experiences with health care professionals (e.g., Roter & Hall, 2006). However, in our study, there were twice as many positive experiences as negative ones. In addition, especially in the research data collected by the semi-structured interview method, it was noticeable that going through both positive and negative experiences helped the patients deepen their reflections of their experiences by comparing facilitating and impeding factors, thus giving the possibility to recognize the most critical dimensions of professional–patient communication in relation to type 2 diabetes management. Moreover, the help question related to the outcomes and patients' wishes (Butterfield et al., 2009) asked at the end of the interviews helped the participants identify what they were particularly pleased with in their positive experiences, what was missing from their negative experiences, and how these different types of experiences were different in relation to the health-related outcomes. In the future, regardless of the data collection method, it would be useful to align the questions so that all the participants could reflect their experiences with the help of the same supplementary questions, particularly in relation to their own communication behaviors and the outcomes of professional–patient communications.

**Adequacy of the Research Data**

In addition to informing the questions, another central dimension of data collection is to identify when the collected research data may be considered sufficient. According to Flanagan (1954), the number of participants in the study is not as crucial as the number of critical actions and their repetition in the observers' descriptions. He suggested that if the studied activity is simple, 50–100 critical actions (i.e., incidents) might be enough. Moreover, describing the critical requirements of a more complex activity may require the collection of as many as thousands of critical incidents.

In health research studies that have applied the CIT, the adequacy of the research data has been evaluated based on the number of descriptions of situations and experiences. The number of descriptions usually ranges from more than 20 (e.g., Wong-Wylie & Jevne, 1997) to more than 1,000 (e.g., Ruben, 1993), depending on the participant group and aim. The typical number of descriptions has exceeded 100 incidents. In addition, researchers have described the

phase of data collection in which no new information has been implemented in relation to the studied activity and its critical elements (e.g., Wendt et al., 2004). The reason for this might be that the adequacy of research data is difficult to evaluate before the quality of the data is ascertained. Thus, it has also been suggested that the adequacy of research data could be evaluated by determining the accuracy of the data on critical incidents. It has been stated that those descriptions related to critical incidents must include the situation (i.e., place, persons, conditions, and activities), the relevance to the general aim of the activity, and the effects on the activity. If full and precise details are given, it can be assumed that this information is accurate (e.g., Anderson & Wilson, 1997).

### ***Our Application***

In our study, 41 patients participated in the research. In total, we found 67 experiences of professional–patient discussions in the data, of which four had to be rejected because they did not meet the requirements of critical incidents (e.g., Anderson & Wilson, 1997; Flanagan, 1954). The research data were deemed sufficient because the number of discussion descriptions was sufficiently aligned with earlier health research studies. In addition, the characteristics of professional–patient communication and its relations to diabetes management began to recur after 15 interviews. However, the actual saturation point was difficult to determine because all descriptions were considered unique entities that inevitably contained new information. For this reason, the most important factor used to assess the adequacy of the data was the quality and versatility of the data, which we regularly evaluated throughout data collection. We initiated the data analysis after the collection of open survey data and 10 interviews. After that, the quality of the research data could be assessed more thoroughly. Such an assessment is also recommended in future assessments of the adequacy of research data.

### **Analyzing the Data**

In the original description of the CIT, Flanagan (1954) recognized that no minimal criterion or set of rules could be structurally applied in all analyses. However, in categorizing research data, he recommended that the unit of analysis consist of critical requirements for some experience or activity (see also Viergever, 2019). Moreover, Flanagan (1954) recommended that “preferred categories will be those believed to be most valuable in using the statement of requirements” (p. 344). Interestingly, he also recommended that those categories related to central critical requirements be formulated in a neutral way. In practice, this means that at the end of analysis, the facilitating and/or impeding factors be combined as major categories that have the same level of importance.

In multidisciplinary health research studies where the CIT has been applied, the unit of analysis has usually been the critical event, situation, experience, or amalgam of multiple experiences, according to which the critical requirements of the studied activity have been described (Viergever, 2019). As recommended by Flanagan (1954), the critical elements have usually been defined in the results of health research studies in neutral names (e.g., Björklund & Fridlund, 1999; Wendt et al., 2004). However, in the results sections of some studies, the neutral major categories have also been described more precisely through the facilitating and impeding factors (e.g., Ivarsson et al., 2004). It is also worth noting that in some studies, the names of the categories show both contributing and inhibiting factors (e.g., Wong-Wylie & Jevne, 1997).

### ***Our Application***

In our study, the basis of analysis was a significant interpersonal communication experience in which professional–patient communication and diabetes management-related outcomes were explored. First, we distinguished from the research data the experiences, which we divided into positive and negative experiences based on whether the experiences facilitated or impeded diabetes management. This division was made to emphasize the two-way significance of professional–patient communication about type 2 diabetes management. We used the division in the categorization of the results to present the central professional–patient communication phenomena in the contexts of positive and negative experiences. This division provided the basis for all analyses.

However, separating the positive and negative experiences from the research data was not a straightforward process. Some participants had difficulties evaluating their experiences as positive or negative. Moreover, there was also difficulty maintaining the participants' focus regarding whether the experiences were positive or negative in general or whether they were only positive or negative, particularly in type 2 diabetes management. However, the facilitating and impeding significance of the participants' significant interpersonal communication experiences was facilitated by following Flanagan's (1954) instructions for applying the CIT. That is, we determined the criticality of the experiences by the study participants, and we also based the analysis on the participants' classification of interpretations. Future research should consider whether it would be more useful not to differentiate the experiences as either positive or negative. Moreover, examining the participants' experiences without a dichotomic setting would perhaps be better aligned with the original description of the CIT (Flanagan, 1954), which might offer more opportunities for studying the multidimensional, situation-based nature of professional–patient communication and its outcomes.

### **Discussion**

The aim of our study was to describe and evaluate the applicability of the CIT in qualitatively identifying the health-related outcomes of professional–patient communication. We determined the applicability of the CIT in this context through previous CIT studies, as well as a study we conducted, in which we applied the CIT to explore those relationships between the patients' significant interpersonal communication experiences with health care professionals and type 2 diabetes management. As a framework for the description and evaluation of the CIT, we utilized Carter and Little's (2007) model of qualitative research to approach the CIT from the perspectives of epistemology, methodology, and method.

The description and evaluation of the CIT and its applications, especially in our study, showed that in addition to defining the critical requirements of professional–patient communication about specific outcomes, it was also possible to apply the CIT to identify the significance of the multidimensional nature of professional–patient communication. It is well known that patients' health is likely less influenced by single communication characteristics or encounters than by the care results and cumulative outcomes of the patients' communication experiences over time in their social environments (e.g., Epstein & Street, 2007; Street et al., 2009). However, the results of our study show that the CIT allowed for identifying how the interlocutors could create significant and multidimensional meanings already in a single care situation, to which it is possible to precisely reflect. Although reflecting on the incidents alone or in collaboration with a researcher may also alter the assessment of an individual critical incident in a research situation, it does not diminish the value of the incident, the participant's ownership of the incident, or the importance of exploring the single incidents. On the contrary, describing single critical incidents and structuring them through reflection supported by

researcher may together be the key to a more detailed and in-depth study of professional–patient communication and its outcomes (e.g., Norman et al., 1992).

When applying the CIT in the study conducted by the authors, we made many successful solutions. Especially, applying Flanagan’s (1954) guidelines and using the critical incident as the basis of analysis throughout the research process were successful solutions. Moreover, asking for both positive and negative experiences and using the interactive semi-structured interview method with the detailed interview frame were also successful choices (Norman et al., 1992; Schluter et al., 2008). Instead, terming critical incidents as significant interpersonal communication “experiences,” focusing on the discussion rather than the interaction situation, conducting a narrow open survey as the first data collection method, and using inductive content analysis instead of thematic analysis were not the most appropriate solutions. Making successful and not-so-successful choices shows that the CIT is a flexible framework should be applied with careful consideration and evaluation from the planning phase of the research when considering the CIT as a part of the research frame and the kind of information being sought. In this kind of evaluation processes, Carter and Little’s (2007) three dimensions (i.e., epistemology, methodology, and method) are effective and can be seen as similar to three turning mirrors, against which the research setting in the middle of the mirrors can be reflected simultaneously throughout the research process. When the researcher turns these three mirrors slightly as the research process progresses and knowledge of the studied phenomena and information building develops, the study setting changes, which is permissible (and usually necessary) in qualitative research. However, if the researcher does not regularly reflect on the research setting in relation to the dimensions of epistemology, methodology, and method, the coherence of this flexible research is easily lost (e.g., Viergever, 2019).

Our study also showed that in addition to using the CIT as a reflective tool for health care professionals to understand and develop their work practices (Graybill et al., 2017; Keatinge, 2002; Rademacher et al., 2010; Steven et al., 2020), the CIT could also be a tool for helping patients develop their interpersonal communication competence, which could have important positive effects not only for communicating appropriately with professionals and gaining clarity about the incident, but also for interpreting the professionals’ communication to receive important information and social support (see, e.g., Farrington & Townsend, 2014; Query & Wright, 2003). Although interpersonal communication competence has proven to be necessary for patients in every care situation, current methods used to increase patients’ interpersonal communication competence through reflection have been limited (e.g., D’Agostino et al., 2017). Interestingly, in our study, utilizing semi-structured interviews with the CIT seemed to help many patients to reflect and express their thoughts in multidimensional ways, clarify their experiences, and understand the significance of both interlocutors’ communication behaviors in successful interpersonal communication in care situations. Thus, based on the findings, the CIT could be recommended as a useful reflective tool not only in studying professional–patient communication, but also in developing professional–patient communication and its health-related outcomes by supporting both professionals’ and patients’ interpersonal communication competence.

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