

The 3 Cs of Content, Context, and Concepts: A Practical Approach to Recording Unstructured Field Observations

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ABSTRACT

Most primary care researchers lack a practical approach for including field observations in their studies, even though observations can offer important qualitative insights and provide a mechanism for documenting behaviors, events, and unexpected occurrences. We present an overview of unstructured field observations as a qualitative research method for analyzing material surroundings and social interactions. We then detail a practical approach to collecting and recording observational data through a "3 Cs" template of content, context, and concepts. To demonstrate how this method works in practice, we provide an example of a completed template and discuss the analytical approach used during a study on informed consent for research participation in the primary care setting of Qatar.

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INTRODUCTION

Clinical observation is a method well known to primary care physicians. It is the rare physician who takes a patient's words at face value without also using contextual clues, such as the patient's appearance and behavior, to construct a picture of the patient's health.¹ Indeed, medical education has recently highlighted the need for physicians to be more observant through innovative curricula that teach observational skills by examining art.^{2,3}

Field observations offer insight into behaviors and the environment⁴ and can play an important role in primary care research. A decades-long history of observational research in primary care has demonstrated how contextual factors both in and out of the clinic influence the effectiveness of interventions, as well as clinical outcomes.⁵⁻⁹ A recent commentary in *JAMA Internal Medicine* has called for more "ethnographic and field studies" to capitalize on the "value of direct observation," particularly in studies of patient safety.^{10(p1024)}

Unfortunately, most primary care researchers lack a practical approach for including field observations in their studies. Here, we present an overview of unstructured field observations as a qualitative research method for analyzing material surroundings and social interactions, aimed at researchers new to unstructured observations. We then detail a practical approach to collecting and recording observational data through a "3 Cs" template of content, context, and concepts. To demonstrate how this method works in practice, we provide an example of a completed template and discuss the analytical approach used during a study on informed consent for research participation in the primary care setting of Qatar.

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BACKGROUND

Observational field research has its roots in the social sciences and is most often associated with participant observation fieldwork in cultural anthropology and sociology, though it has spread to disciplines as diverse as nursing, education, and social work.¹¹ Although he was not the first to

undertake fieldwork, the Polish anthropologist Bronislaw Malinowski has been ascribed with popularizing participant observation as a research method.¹² Unlike structured interview sessions, participant observation allows for more flexible interactions with research participants through social events, casual conversations, and semi-structured interviews conducted in settings that are a natural part of participants' everyday lives.¹³ There is some debate as to how much a researcher should "participate" in daily activities,¹² but it is often enough simply "to be tolerated as an unobtrusive observer."^{14(p195)}

Malinowski's work was influenced by the scientific positivism of the era, but later social scientists launched an antipositivist (interpretivist) critique that shifted the focus of observational research from a search for social facts to an understanding of cultural meanings.¹⁵ We follow an interpretivist approach in believing the purpose of observational research is to arrive at what the anthropologist Clifford Geertz called "thick description."¹⁶ In a famous example, Geertz explains how the same action (a quick blink of the right eye) holds different meanings based on the cultural context in which it occurs.¹⁶ Only in a specific context will a blink be recognized as a wink—a conspiratorial signal to a friend—rather than as a meaningless twitch of the eye. Thick description, then, uses empirical data from multiple sources to contextualize individual behavior and interpret its meaning.

A crucial assumption in participant observation is that the researcher is the instrument of data collection.¹⁷ This assumption means all data are filtered through the researcher, through his or her personal characteristics, background, and experiences.¹⁸ The result is a different relationship to objectivity than that found in the natural sciences. Observational research does not seek objectivity through a conceptual separation between researcher and study participants and phenomena.¹⁹ Researchers are not blank slates; instead, they use prior knowledge and experiences as either implicit or explicit bases of comparison to understand what they observe in the field.²⁰ Personal bias is not seen as a flaw but as part of data collection.¹² Qualitative researchers speak of using bias to explore hunches or ideas, as well as to seek out information contrary to their own views.²¹ It is critical before going into the field for researchers to conduct a personal inventory and reflect on their preconceptions, as these will affect their interpretation of events.²¹ Researchers must also remain aware of potential differences in status between themselves and their study participants, where higher status may be conferred by socioeconomic,

educational, occupational, or other types of privilege, or some combination thereof.¹⁹ Such differences create a certain power dynamic between researchers and participants that can influence data collection.¹⁹ A reflective activity, such as journaling or freewriting, can help define the researcher's lens and help the researcher recognize how he or she may be perceived in the field.²²

RATIONALE FOR COLLECTING FIELD OBSERVATIONS

Perhaps the most compelling reason for conducting observations is to understand behavior (Table 1). Studies have suggested that nonverbal behavior plays a considerable role in communicating shared cultural meanings.²³ Furthermore, emotions are communicated more through facial expression and vocal tone and inflection than through spoken word.^{24,25} Finally, as it pertains to health research, individuals tend to underreport their unhealthy or socially undesirable behaviors^{26,27} and overreport the converse.²⁸ Observational research thus contributes to understanding human behavior in all of these scenarios.

Field observations can help researchers understand how the interactions and activities in a given setting inform behaviors and beliefs (Table 1).²⁹ They contribute to uncovering the broader context of a given scenario, making observational research especially well suited for studying process.¹⁹ In primary care, for example, observational research has deepened understanding of the clinical contexts in which practice transformation to patient-centered medical homes has occurred.³⁰⁻³⁶ Field observations have also helped contextualize the (quantitative) results of randomized controlled trials, by providing insight into why certain

Table 1. Reasons for Conducting Observations in Primary Care Research, With Clinical Examples

Reasons to Observe	Clinical Examples
To understand behavior	Describe whether or how staff follow clinical guidelines or study protocols
To understand context	Understand environmental factors influencing uptake of an intervention
To understand process	Examine at baseline how clinical preventive services are delivered in offices
To recognize patterns	Examine variations in how clinical preventive services are implemented across multiple practices
To see what people are reluctant to discuss	Identify perceived cultural taboos, for example, parents reluctant to discuss HPV vaccination for prepubertal children
To gain direct personal experience and knowledge	Explore patient experiences of undergoing clinical procedures, for example, the experience of colonoscopy preparation
To move beyond selected perceptions	Observe how patients respond to universal screening questions, for example, depression screening, intimate personal violence screening

HPV = human papillomavirus.

randomized controlled trials have succeeded or failed.^{9,37}

Thus, field observations allow researchers to move beyond selected perceptions and protocols, and better understand the nature of particular activities, who performs them, and the contexts in which they occur.

Observational research may not always be appropriate, and under certain circumstances, participants will not tolerate an observer (Table 2). Individuals who engage in socially undesirable or illegal behavior may be reluctant to have an observer present or be at risk personally¹² (although the opposite might also be true³⁸). Sometimes the presence of an observer might change participants' behavior, a phenomenon known as the Hawthorne effect.³⁹ Research has shown this effect may not be as great as feared,⁴⁰ however, and multiple observations over the long term can be a mitigating factor.²⁹

UNSTRUCTURED AND STRUCTURED FIELD OBSERVATIONS

A central tenet of observational research is that observations must be recorded to count as data,¹² and it is only through the regular and systematic recording of field observations that researchers create texts for subsequent analysis.⁴¹ Field observations can be structured, unstructured, or a combination of both. Structured observations use a template to record tabulations of specific behaviors that can be measured and analyzed statistically.⁴² These observations often focus on highly specific issues and are indicated when the intent is to validly and reliably measure specific behaviors. Unstructured observational data use the researcher's words for thick description of phenomena or events. These words emerge through the researcher's experience in the field.⁴³ Even though unstructured, the observations are still focused because they address a research question or specific phenomenon. Within that focus, there is great latitude in what the researcher can choose to record (Table 3).

To illustrate the potential of field observations, we introduce a study that relied heavily on observational data supplemented by interviews. The first author (M.D.F.) served as co-principal investigator on a multi-stage, mixed methods parent study in Qatar to develop a health care quality assessment instrument that was adapted for populations whose native languages were Arabic, English, Hindi, and Urdu.⁴⁴ A theoretical

Table 2. Potential Reasons for Not Conducting Unstructured Observations in Primary Care Research, With Clinical Examples

Potential Reasons Not to Observe	Clinical Examples
Research participants will not tolerate an observer	Research on illicit behaviors, such as drug abuse, or sexual practices relative to use of barrier devices or contraceptives
Participants will change behavior if observer is present (Hawthorne effect ³⁹)	Possible change in adolescent bullying behaviors in presence of observer; altered communication behaviors of couples dealing with interpersonal violence; compromising of therapeutic rapport with the added presence of a stranger
Research will compromise participant decency, privacy	Research on physician-patient-family interactions that involves clinical examination of private areas; for example, breast, pelvic, male genital, rectal examinations may not be tolerable
Reporting observations would be stigmatizing or unethical	Risks of stigmatization, which are present for any socially marginalized population

model, Cultural Construction of Clinical Reality developed by Kleinman et al,⁴⁵ guided the research. During the first stage of qualitative data collection, Qatari team members expressed concern about how potential participants would respond to recruitment strategies dictated by US-based institutional review boards. Existing literature had little guidance for recruiting participants in Arabian Gulf countries. We therefore conducted a study to explore how individuals in Qatar responded to in-person recruitment requests.⁴⁶ The 3 Cs template emerged from the need for institutional review board approval of data collection instruments and as a training instrument for research assistants.

THE 3 Cs UNSTRUCTURED FIELD OBSERVATIONS TEMPLATE

The 3 Cs template provides an easy approach to collecting observational data. A full 3 Cs template (Supplemental Appendix 1, available at <http://www.AnnFamMed.org/content/17/6/554/suppl/DC1/>) includes the study metadata (details about the project), the research question, and the 3 Cs of context, content, and concepts.

Field Observation Metadata

The study metadata include information such as the project title, the study document type, the observer, the date and time, the location, and a participant description (eg, ID, descriptor if multiple individuals). The metadata from a single observation collected during the Qatar recruitment study are given in Supplemental Appendix 2, available at <http://www.AnnFamMed.org/content/17/6/554/suppl/DC1/>. Additional information here included the language spoken by the researcher and participant.

Research Question

The research question keeps observations focused on the purpose of the study. Because there is bound to be

Table 3. The 3 Cs—Context, Content, and Concepts—Approach to Field Observations

Category	Definition	Focus
Context	The circumstances (both material and theoretical) under which observations are being conducted, as well as any historical, sociocultural, political, and other information that may directly (or indirectly) influence data collection	Who is there as observer? What is your reason for being there? Why this location? What is your state of mind (eg, confused, unhappy, tired, excited)? What are your key areas of (observational) interest based on your prior research experience and/or scholarly background?
Content	The matter or substance of what happened	Who are the participants? How are they related, if at all (eg, physicians and patients, work colleagues, friends or family members, cancer survivors)? How do participants interact? What actions/events are occurring? What is the timing/sequence of events? What quotes best capture the exchange that occurred?
Concepts	The larger theoretical context to which observations connect, either as evidence of or refutation of theory; theoretical insights that emerge from observations (as in grounded theory); directions for future research	What have you learned that you did not know before? Does this observation help support or refute your hypothesis/expectations? How is this observation related to prior observations or to your reading of the scholarly literature? What are some potential implications of what you have observed? What new questions (research or otherwise) arise from this observation? How do participants respond to the presence of an observer? (Are they excited, anxious, skeptical, wary, etc?) What historical or current events may influence this response?

individual variation in data collection (recalling that the researcher is the instrument of data collection), including the question on the template provides a focal point for recording details. As illustrated in Supplemental Appendix 2, there were both primary and secondary research questions for researchers to address.

Context, Content, and Concepts

The context, content, and concepts are summarized in Table 3 and explained in further detail below.

Context

The first C, context, has a dual meaning: its most immediate referent is the circumstances in which the researcher is making observations (eg, who is doing the observation, where, and when). In a broader sense, context also refers to the researcher's (or team's) prior research experience, and could include knowledge gained from reading the scholarly literature, and additional information about a population, organization, or community—anything that speaks to the social surroundings and recent events that may influence the present interaction.⁴⁷ Context can act as a reminder of the researcher's purpose in using observational methods—and may also include information about the researcher's introduction to the field (eg, "invited by Dr A to observe her clinic" or "clinic recruited through practice manager"). Visuals, including sketches or photographs (if possible), may be useful, especially if certain structural features stand out (eg, small vs large waiting room; front staff behind an

open desk vs behind a glass partition). This information can enable quick and easy comparisons between multiple locations.

Content

The second C, content, is more focused than context, as it refers directly to what happens during the observation period. (We recommend that researchers record each observation period on a separate template, creating multiple shorter documents, for each episode of observing, rather than in a single long document, for later analysis.) Although observational research is often touted as holistic—that is, covering everything within the 5 senses during a given stretch of time—in truth, researchers continually make decisions about where to point their focus. The research question and the project's theoretical orientation (the research questions, and the first C, context, described previously) are paramount here in guiding the observations.

Concepts

The third C, concepts, is a space for the researcher to connect the minutiae of his or her field observations with the bigger picture, to think back to the research question or hypothesis and compare theory with practice. It can be used to reflect about the process of research, or procedural or ethical questions that arise in the field. It is a space for nascent analysis, where the researcher can try out new ideas based on insights gained in the field. Researchers may take note of emergent patterns or themes (as in grounded theory⁴⁸), may

reflect on their experience in the field, or both. In this way, the third C provides a sort of running commentary on the field observations, which serves both as the foundation for later analysis and as an audit trail that demonstrates how observation, data collection, theory, and analysis are all intertwined.¹⁵

USING THE 3 Cs APPROACH IN THE FIELD

Recording Field Jottings

There is never enough time in the field to write down everything one observes. Indeed, recording observations becomes even more difficult when the researcher participates in ongoing activities by, for example, engaging in conversation, directing a lost patient to the exit, or lending a hand to set up for a meeting. Furthermore, most of the time, a field researcher does not bring a computer into the field but rather relies on pen and paper, the latter being less obtrusive and easier to manage (although that has changed with the advent of smartphones and tablets). Generally speaking, therefore, no one writes actual field notes in the field. Rather, they capture field jottings—words, phrases, or drawings to jog their memories after the fact.⁴¹ In the Qatar recruitment study,⁴⁶ the research assistants used a printed 3 Cs template for jotting down ideas as they occurred.

Expanding on Field Jottings

After leaving the field site, the observer has the opportunity to construct, from field jottings, a more extensive record of what was observed.²⁹ It is important to write these expanded field notes as soon as possible after the observation session (hours, not days, later); the more time that passes, the greater chance that the researcher will recall fewer details. A first pass should focus on writing descriptive text focusing on the “what” and “how” while avoiding summative or generalizing statements. The best field notes are rich with details that convey a sense of what it is like to be in the time and space described (ie, thick description). Expanded and edited notes can be found in Supplemental Appendix 2.

Working With a Research Team and Analyzing the Data

Primary care research is typically team based. The 3 Cs approach to field observations can facilitate iterative data collection and analysis. Field notes should be shared among team members both to encourage the entire team’s familiarity with the field and to identify salient points for future data collection and pattern recognition. The first few observational sessions should be the most detailed, as this is when the researcher is least familiar with the field.¹⁵ Of course, not all details will

ultimately prove relevant, but they can act as a starting point for more refined observations later on. Furthermore, after the researcher begins to recognize what counts as the norm in a given setting, he or she can then more easily identify deviations from that norm. Such surprises in the field can lead to unexpected insights that generate new directions for future research.

Field notes can be analyzed like any other qualitative text by, for example, searching for key words and coding for thematic content. Even if they are not formally analyzed, field notes may provide important context for understanding data derived from (time-limited) interviews and surveys. In the Qatar recruitment study,⁴⁶ the team conducted iterative analysis of the textual data from field observations and interviews, which led to the creation of a coding scheme in Atlas.ti (ATLAS.ti Scientific Software Development GmbH). The team also integrated numerical data from the demographic instrument and recruitment procedures, to create a narrative format for the results.

Finishing Field Observations in a Study

A final consideration is when to end the observational period or series. One possibility is to have a predetermined end point. In the Qatar recruitment study,⁴⁶ field observations continued until the study recruitment goals were met. An alternative is to seek data saturation. Guidelines for determining the saturation point in qualitative research vary, although a recent review calls for saturation to be operationalized in terms of research question(s), theoretical framework, and analytical goals.⁴⁹

DISCUSSION

Field observations are paramount in understanding contextual factors in any research project and have the potential to reveal important insights about the way actors and institutions work in a given place and time. Observational research is inductive and iterative,¹⁵ and its greatest strength is its open-endedness. Because the researcher does not work in a controlled environment or with a standardized checklist or questionnaire, he or she is able to capture any data that do not fit into a priori categories. In such a setting, the research question serves as a guide, not a mandate, and it leaves room to address unexpected occurrences.

Although the 3 Cs template provides an excellent entrée for the use of field observations, there are other observational alternatives. Structured observations may be better indicated for inquiry exploring systematically the nature and metrics of phenomena, with integration across multiple observers for the purpose of statistical analysis. Another option is video recording, which

yields multiple data sources, such as verbal, paraverbal, and nonverbal responses, and requires specific levels of skills and techniques for analysis.⁵⁰

The 3 Cs approach to unstructured field observations can be used when observation is the primary research method⁴⁶ or in tandem with another research method, such as qualitative interviews.⁵¹ In the Qatar recruitment study, the observations were conducted more with the intent of being supplemental, but ultimately served as the primary source for a specific publication.⁴⁶ The template, which can be submitted for institutional review board approval, provides a straightforward mechanism for recording events and behaviors in almost any project involving human participants. As mixed methods gain increasing popularity in health services research,⁵² unstructured field observations can play an important role in contextualizing other types of qualitative and quantitative data, resulting in more rigorous research designs and data collection.

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