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Academic Surgery



# Crash Course on Educational Research Methodology

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# Disclosures

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- None
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# Outline

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- Qualitative vs “Quantitative”
  - Types of qualitative design
  - Analytic Strategies
  - A note on surveys
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# Qualitative vs. Quantitative

## Qualitative

Mentally, I'm kind of broken. In the OR, you have to not touch sterile equipment and get through—like those rooms really aren't that big. And you know, you have to crawl under the table to get pedals, random stuff. It's just affecting. . . . It's not like you're just sitting there on a computer. You're standing and bending and moving. And yeah, I can totally tell I'm too fat for this job. I say that all the time. Which is not necessarily true, but . . . I guess I make plenty of comments like, "Oh, I'm too fat for the OR. Oh, I'm too fat for this job." Like I say that plenty of times. And it's more of a, "Yeah, I know I'm fat. You don't need to point it out."

## Quantitative

### 1. I feel emotionally drained from my work.

Never  A few times a year or less  Once a month or less  A few times a month  Once a week  A few times a week  Every day

### 2. I feel used up at the end of the workday.

Never  A few times a year or less  Once a month or less  A few times a month  Once a week  A few times a week  Every day

### 3. I feel fatigued when I get up in the morning and have to face another day on the job.

Never  A few times a year or less  Once a month or less  A few times a month  Once a week  A few times a week  Every day

### 4. I can easily understand how my recipients feel about things.

Never  A few times a year or less  Once a month or less  A few times a month  Once a week  A few times a week  Every day

### 5. I feel I treat some recipients as if they were impersonal objects.

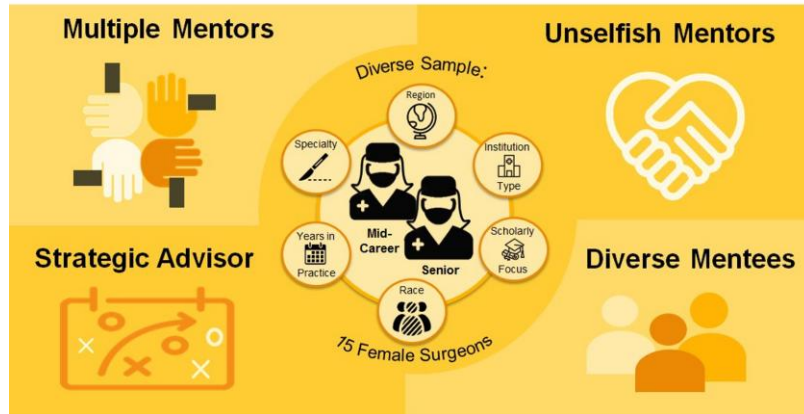
Never  A few times a year or less  Once a month or less  A few times a month  Once a week  A few times a week  Every day

### 6. Working with people all day is really a strain for me.

Never  A few times a year or less  Once a month or less  A few times a month  Once a week  A few times a week  Every day

# Qualitative vs Quantitative

## Characteristics of Effective Mentorship for Academic Surgeons: A Grounded Theory Model



## Perceived value of a program to promote surgical resident well-being

Balance in Life Program*	Survey 3 years later to assess value (n=56, 74% response rate)	Three most valued elements**
<ul style="list-style-type: none"> <li>Access to healthy snacks</li> <li>Local guide</li> <li>Group counseling</li> <li>Peer mentorship</li> <li>Leadership training</li> <li>Social events</li> </ul>		<ul style="list-style-type: none"> <li>Access to healthy snacks (M=4.61)</li> <li>Group counseling (M=3.58)</li> <li>Quarterly social events (M=3.48)</li> </ul>
*Est. 2011		**5-point scale; 5=extremely valuable

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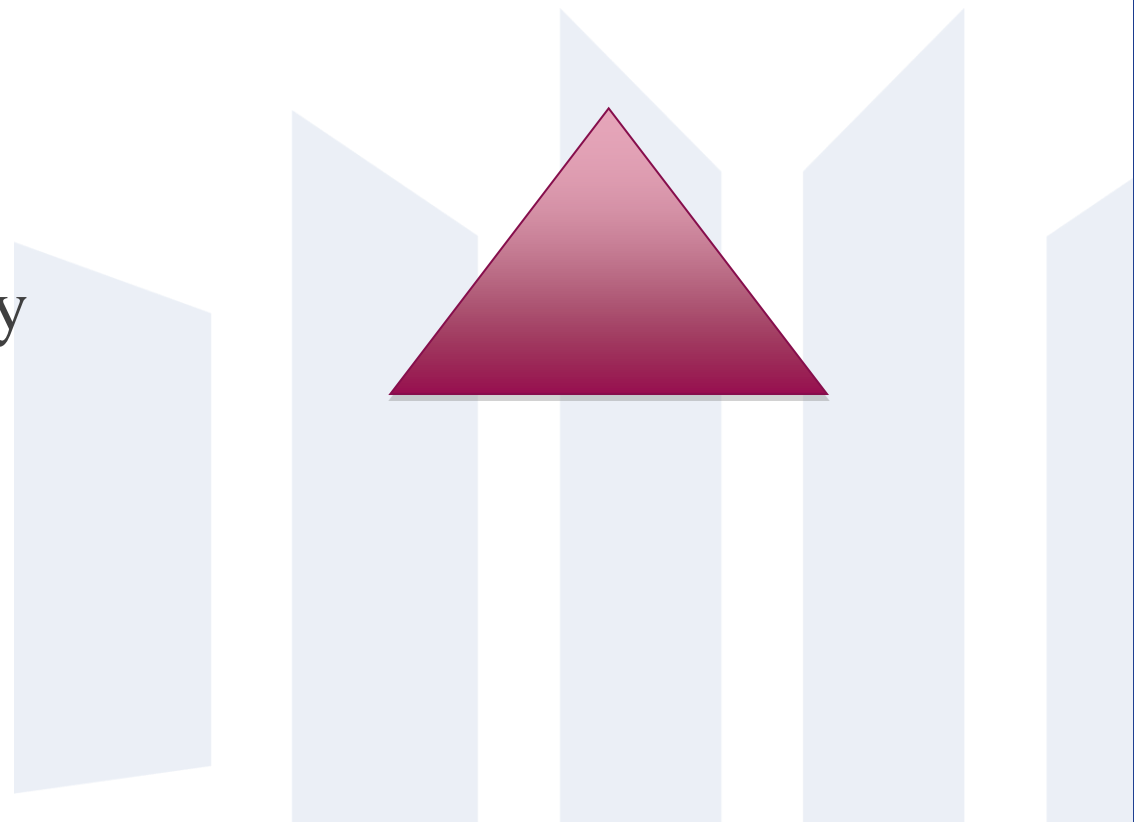
Cochran et al. *Ann Surg.* Oct 2017.

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# Qualitative Approaches

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- Phenomenology
  - Ethnography
  - Grounded theory
  - Others
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## How should we talk about palliative care, death and dying? A qualitative study exploring perspectives from caregivers of people with advanced cancer.

Collins A<sup>1,2</sup>, McLachlan SA<sup>1,3</sup>, Philip J<sup>1,2,4</sup>.

### ⊕ Author information

In-depth, exploratory interviews of 40–120 min duration were conducted by one researcher (A.C.). Drawing techniques from narrative interviewing,<sup>17</sup> one broad question invited the carer to tell their story of their experience. This was followed by supporting affirmations of understanding to encourage dialogue. Where relevant, direct probes were used to elicit further communication about palliative care, death and dying. Probes remained flexible to allow the interviewer to explore these sensitive topics as they were raised within participants' narrative.

Interviews were held from June 2015 to March 2016 at a place preferred by the carer, including inpatient (in clinic ( $n = 8$ )) and home ( $n = 6$ )) settings. When a carer and their carer both consented to participate in the dyad interview was undertaken if requested and analysed separately ( $n = 7$ ). Permission was sought to record interviews, which were then transcribed verbatim. Simultaneous with data collection, one author (A.C.) undertook initial immersion in the data, allowing for saturation to be determined at the point when no new concepts were being raised by participants.

### Data analysis

As previously reported,<sup>14</sup> a cyclical approach to data analysis was taken involving methods from interpretative phenomenology.<sup>18</sup> Themes were derived from direct participation with and interpretation of the interview dialogue.<sup>18</sup> Preliminary title themes from individual interviews were initially identified by two authors (A.C. and J.P.). Master lists of themes from across the dataset were then discussed and refined with a third author (S.-A.M.), allowing for consolidation and clarity of concepts. Direct narrative excerpts were extracted to provide demonstration of each of the themes. Analysis derived

## NOT FAKING IT: MAKING REAL CHANGE IN RESPONSE TO REGULATION AT TWO SURGICAL TEACHING HOSPITALS

### ABSTRACT

One of the great paradoxes of institutional change is that even when top managers provide real support for change in response to new regulation, the very people whom new programs are designed to benefit often do not use them. In this 15 month ethnography of two hospitals responding to new regulation, I demonstrate that doing so may require beneficiaries to challenge their immediate superordinates whose interests run counter to change. I draw on concepts from social movement theory to argue that real change can be accomplished when free spaces exist where beneficiaries and superordinate reformers can develop new frames, a new identity, and a new sense of efficacy that enable them to contest practices with superordinate defenders in everyday encounters. I conclude by discussing the implications of intra-organizational free spaces for research on institutional change and social movements inside organizations.



## METHODS

The methodological strategy employed in this paper draws on ethnographic data collection (e.g. Bosk 1979; Heimer 1999) and historical comparison (e.g. Mill 1888 [1970]; Skocpol and Somers 1980) to generate grounded theory. The two cases studied, ALPHA and BETA, were selected because they were two hospitals in the same region doing similar work that were responding to the same regulation. Through ethnographic fieldwork, I found that the two cases had different outcomes. This difference in outcomes afforded the opportunity to study variation in insititutionalized practice change in response to regulation. The goal of the analysis was then to identify the difference that was responsible for these contradictory outcomes. Since it is never possible to match cases exactly in field settings, one cannot make causal claims using historical comparison, but the method is useful in allowing one to provide compelling evidence of the claim being made in contrast to plausible alternative explanations.

# Ethnography

## Ethnographic Data Collection

One methodological advantage of ethnography is that it provides real time data that spans the period in which the change happened; I observed the change process from 3 months before the programs were introduced to establish a baseline and watched the entire process for 12 months afterward until it moved into steady state at both hospitals. While the regulation requiring work hours reduction did not formally go into effect until 2003, ALPHA and BETA adopted new programs to prepare for it in 2002. For the first three months (April 2002-June 2002), before the introduction of the new programs, my research focused on documenting traditional surgical resident day-to-day practices to establish a comparative basis for determining how changes unfolded. During this time, I interviewed residents (90% of residents

interviewed at ALPHA and 88% at BETA), staff surgeons, and Directors at ALPHA and BETA and asked questions about how the impending changes would affect patient care, resident education, and resident quality of life in order to gauge these residents' pre-change support for the regulation.

For the next 12 months (resident year July 2002-June 2003), the research concentrated on the change process. During the whole 15 months, I focused my observation on the interactions of the surgical residents on the general surgery services, and on their interpretations of why they were acting as they did.

From April to November, I spent an average of 20 hours a week on site at each hospital observing members at different times of day and night during surgeries in the operating room (OR), on the patient floors, and in conferences. After these 8 months of observation at BETA, work practices were unchanged and stable. Therefore, I scaled back my time spent in observation and interviews at BETA to

<sup>1</sup> Residents also rotate through other areas such as trauma and other specialty surgery (e.g. neurosurgery) and through other hospitals. This study covers only observation of the general surgery services.

<sup>2</sup> Unless otherwise indicated, terms in double quotation marks indicate ALPHA and BETA members' own terms. Terms in single quotation marks indicate concepts used by others and are cited as such.

# Grounded Theory


## The erasure of gender in academic surgery: a qualitative study

Fiona Webster, Ph.D.<sup>a,b,c,\*</sup>, Kathleen Rice, PhD  
Jennifer Christian, M.A.<sup>a</sup>, Natasha Seemann,  
Nancy Baxter, M.D., Ph.D.<sup>d</sup>, Carol-Anne Moulton,  
Tulin Cil, M.D., M.Ed.<sup>d</sup>

### Data Analysis

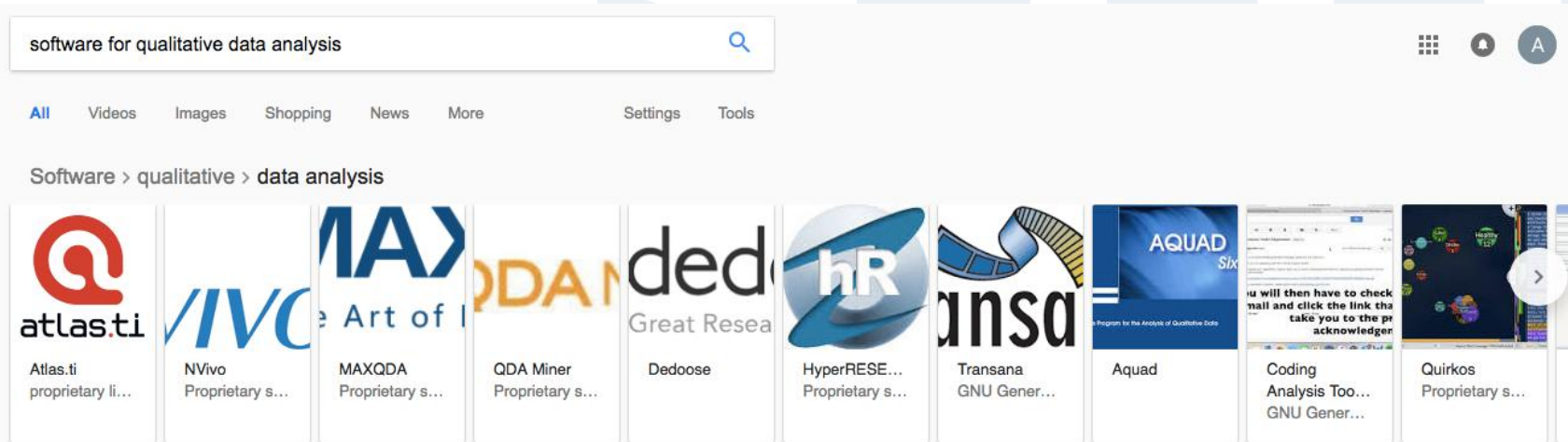
Grounded theory method with a constructivist paradigm was used. The PI consulted continuously with the 2 secondary authors, who had access to the transcribed interviews, for ongoing feedback on codes, emerging categories, and the final theoretical model. Data analysis was conducted according to a 3-step process, moving from open coding (snippets of meaning that generate categories) to axial coding (definition of categories) to selective coding (overarching model to subsume all categories). The PI performed all initial coding manually then reviewed preliminary findings with the other investigators. The 3 investigators communicated regularly until consensus was reached on all aspects of coding and analysis. These communications allowed them to challenge coding and data analysis, to expand emerging thoughts, to raise insight into factors the PI may not have considered, and to identify investigator subjectivities. Each investigator maintained personal project notes during the analysis phase that formed a chronological recounting of the study. Documenting this process made transparent the interpretive, constructive processes of the data analysis. Credibility (validity) was maintained through triangulation of data sources, including participant verification, investigator debriefing, and memo-based audit trails.<sup>8,12</sup> This process culminated in a parsimonious conceptual model describing characteristics of effective mentors based upon the experiences of female academic surgeons.

# Tools

- Observation
  - Interviews
  - Focus groups
  - Structured stimulus
  - Stimulated recall
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# Analytic Strategies











- Data reduction
- Computing



software for qualitative data analysis

All Videos Images Shopping News More Settings Tools

Software > qualitative > data analysis

 atlas.ti Atlas.ti proprietary li...	 NVivo Proprietary s...	 MAXQDA Proprietary s...	 QDA Miner Proprietary s...	 Dedoose Great Resea	 HyperRESE... Proprietary s...	 Transana GNU Gener...	 Aquad Program for the Analysis of Qualitative Data	 Coding Analysis Too... GNU Gener...	 Quirkos Proprietary s...
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## A Quantitative Linguistic Analysis of National Institutes of Health R01 Application Critiques from Investigators at One Institution

Dr. Anna Kaatz, PhD  
Assistant scientist, Center for  
Madison, Wisconsin

Ms. Wairimu Magu  
Doctoral candidate, Center for  
Madison, Wisconsin

Dr. David R. Zimme  
Professor, Department of  
Madison, Wisconsin

Dr. Molly Carnes, MD  
Director, Center for  
and Industrial & Systems  
and a part-time physician  
Education and Clinic

We analyzed critiques with the Linguistic Inquiry Word Count text analysis software program (LIWC 2007, Austin TX), which calculates the percentage of words from predefined linguistic categories in written documents.<sup>28</sup> We examined words in the LIWC's 80 default word categories and 7 others developed for use with LIWC,<sup>23–25</sup> and identified five categories relevant to scientific grant review (Table 1). These word categories are “ability” (e.g., skilled, expert, talented), “achievement” (e.g., honors, awards, prize), “agentic” (e.g., accomplish, leader, competent), “research” (e.g., scholarship, publications, grants), and “standout adjectives” (e.g., exceptional, outstanding, excellent). We developed two categories that reflect “positive evaluation” (e.g., groundbreaking, solid, comprehensive) and “negative evaluation” (e.g., illogical, unsubstantiated, diffuse) of a grant application.

# Survey basics

- Unipolar vs bipolar
- Frequency, to what extent, how much
- Can use options like
  - Not at all, Never
  - Slightly, Rarely
  - Somewhat, Sometimes
  - Moderately, Often
  - Extremely, Always

# Questions?

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