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A Reflection of Adopting Paillé's Data Analysis in Constructivist Grounded Theory Research

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Abstract
Background: The roots of grounded theory are in Chicago sociology, symbolic interactionism, and pragmatist philosophy. Constructivist grounded theory is a popular method for research studies primarily in the disciplines of psychology, education, and nursing. This paper is to convey the experience of adopting Paillé's (1994) as data analysis strategy in doing Constructivist Grounded Theory (CGT) research.
Method: The steps of Paillé grounded theory data analysis was used to manage, organize, and analyze data. It mirrors Charmaz's (2006) method of data analysis by adapting the basic principles of constructivist grounded theory and displaying the data analysis in a sequential form: codification, categorization, linking categories, integration, conceptualization, and theorization.
Results: Adopting Paillé's strategy of data analysis in CGT created an understanding mental health and stigmatization among people with mental illness in Indonesia. A number of significant statements and sub-categories were integrated to formulate the five categories which describe experience of mental illness and stigmatization.
Conclusion: The use of Paillé's strategy in constructivist grounded theory was successful in this grounded theory research. Although Paillé's data analysis steps are presented as separate entities, the researcher must not view them as mutually exclusive, nor assume that the progression between each step is linear. It is a system process of analysis. During data analysis process, Paillé's method of data analysis was very useful to organize data in a sequential manner.

Keywords: Paillé's Data Analysis, Constructivist Grounded Theory, Rigor.

Introduction

Grounded theory methodology has evolved since the 1960s in the United States. The roots of grounded theory are in Chicago sociology, symbolic interactionism, and pragmatist philosophy (Charmaz, 2006). Grounded theory provides practical techniques and procedures for studying social processes, interactions, and relationships between and among people. It was selected as an appropriate research methodology to develop theory concerning the study of people living with mental illness. According to Glaser and Strauss (1967), the aim of grounded theory is to generate theory and grounded theory can be defined as "the discovery of theory from data systematically obtained from social research" (p.2). According to Creswell (2007), grounded theory is a systematic research model that aims to develop a general explanation of a practice, action, or interactions. The first version of grounded theory was called "classical grounded theory," (the Glaserian approach) which was developed and articulated by Glaser and Strauss in their book, *The Discovery of Grounded Theory* (1967). Glaser contributed a positivist, logical, and systematic epistemology and methodology. Strauss contributed a pragmatic Chicago school epistemology and ethnographic methods. Grounded theory is an inductive method of research that uses constant comparative analysis to build and produce a theory grounded in the data rather than to test existing theory. Glaser and Strauss (1967) contended that much of research at that time consisted primarily of the verification of theory or the development of theory through logical deduction from "grand theories" and past studies rather than from the experimental data itself. At that time, they developed grounded theory as a reaction to the positivist paradigm held by social research. The second grounded theory approach was developed by Corbin and Strauss (1990); Strauss and Corbin (1998). This grounded theory is also called a Straussian approach that differs from Glaser and Strauss's classical or Glaserian grounded theory. Strauss and Corbin provide a more prescriptive approach to grounded theory than the original method. Strauss and

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Corbin (1998) believe that the emphasis should not lie with collection of data, but rather with how to analyze whatever data have been obtained. They stress that researchers need to be flexible, and should tailor their approach to their own needs. Strauss and Corbin modified grounded theory procedures and added additional tools for building a theory. Their methods have been criticized as forcing description of data rather than allowing a theory to emerge. Some have asserted that they employ too many tools, which may serve as a distraction from the research process (Melia, 1996). Glaser (2002) mentioned that Strauss and Corbin do not follow the methods as was intended with his approach to grounded theory.

The methodological approaches to grounded theory have evolved with changing sociopolitical and intellectual contexts (Dey, 2003) and these different approaches have resulted in differing interpretations of grounded theory. Glaser and Strauss themselves diverged in the 1980s, after which Glaser produced his own understanding of grounded theory methodology (Glaser, 1992). Glaser argued that 'data emerges' and thus offers the same picture of facts to every researcher in the form of some objective truth. Strauss stressed that a researcher has to actively obtain theory from data. Researchers will thus place the focus on different aspects of the collected data depending on their background, beliefs, and values. Charmaz (2000) argues that Glaser's approach is positivist since it wants to exclude the researcher's perspective and she recommends a set of procedures to render the data into identifiable knowledge. Charmaz also contends that Strauss and Corbin were also inherently positivist: "Both assume an external reality that researchers can discover and record: Glaser through discovering data, coding it and adopting comparative methods step by step; Strauss and Corbin through their analytic questions, hypotheses and methodological applications" (Charmaz, 2000, p.513).

Literature review indicated that grounded theory methodology has been utilized by nursing researchers. It provides great potential for nursing research because it seeks to discover issues of importance in participants' lives. According to Schreiber and Stern (2001), grounded theory was the second most popular qualitative research method in published nursing papers. It has proved useful for developing nursing knowledge and directing nursing practice as well as providing explanatory theories of human behaviour (Morse, 2001; Wuest, 2007).

Charmaz's Constructivist Grounded Theory (CGT)

The Constructivist Grounded Theory (CGT) research approach was introduced first by Kathy Charmaz in her book, *"Constructing Grounded Theory – A practical guide through qualitative analysis"* (Charmaz, 2006). CGT can be considered the third generation of a grounded theory method. The methodological approach of constructivist grounded theory is rooted in Glaser and Strauss's (1967) grounded theory but it is situated between positivism and post-modernism (Charmaz 1995). Unlike Glaser and Strauss, constructivist grounded theorists view their theories as situated in the context in which they were generated and are not fully inclusive of all contexts. It is a very practical approach that stresses the reflexivity of the researcher and captures the creative and dynamic character of the research process, recognizing that the categories, concepts, and theoretical level of an analysis emerges from the researcher's interactions in the field and questions about the data. Charmaz's (2006) grounded theory design is consistent with a constructivist epistemology and ontology by "placing priority on the phenomena of study and seeing both data and analysis as created from shared experiences and relationships with participants and other sources" (Charmaz, 2006, p.330). She claims that a more objectivist approach, where the investigator's role is to discover the truth that lies within the object of investigation, diminishes "the power of a constructivist approach by treating experience as separate, fragmented and atomistic" (Charmaz, 2006, p.331). Data that are assumed to be objective facts and already exist in the world are, with an objectivist approach, to be discovered by the researcher to determine the theories they imply (Charmaz, 2006). Charmaz (2006) argues that first, theorizing is an activity and grounded theory methods provide constructivist ways to proceed with this activity. Second, the research problem and the researcher's unfolding interests can shape the content of this activity, not the method. CGT was adopted in this study because its philosophical approach fits my constructivist philosophical assumptions and I liked the flexible approach to the method.

Paillé's Data Analysis Method in Constructivist Grounded Theory

One of the most important characteristics of grounded theory analysis is the simultaneous collection and analysis of data. Each series of interviews is followed by data transcription and analysis that, in turn, guides future interviews, observations, etc. As such, carrying out a grounded theory research method is not so much a process of coding as it is a process of constant interrogation and verification of data through interviews (Paillé, 1994).

For this research, data analysis followed the basic principles of constructivist grounded theory, as adapted and displayed in a sequential fashion by Paillé (1994). Paillé's (1994) work does not seek to direct how one conducts qualitative research (methodology), but, rather, guides the analysis of the data. In addition, Paillé's (1994) adaptation of the method substitutes the multiple coding stages developed by Charmaz with a series of successive steps of an iterative process. This process represents the results of a rigorous interpretation etched by a sequential series of reflections and constructions that shed light on a phenomenon, one that is always more integrated and empirically grounded in the data itself (Paillé, 1994). Six successive steps have been identified by Paillé (1994) when conducting a grounded theory analysis. Although these steps are presented as separate entities, the researcher must not view them as mutually exclusive, nor assume that the progression between each step is linear (Paillé, 1994).

There are three main stages grounded theory data analysis: 'Initial coding, intermediate phase, and final development (Heath and Cowley, 2004).' Based on these stages, Charmaz's (2006) Constructivist Grounded Theory (CGT) also begins with initial coding, focused coding (intermediate phase), and theoretical coding (final development). Paillé's data analysis can also be divided into three stages: codification and categorization (initial coding), linking categories and integration (intermediate phase), conceptualization and theorization (final development). Although Paillé's data analysis steps are presented as separate entities, the researcher must not view them as mutually exclusive, nor assume that the progression between each step is linear. It is a system

process of analysis. During my analysis process, I found that Paillé's method of data analysis was very useful, helping me to organize my data in a sequential manner.

Table 1: Steps of Grounded Theory Data Analysis (Paillé, 1994)
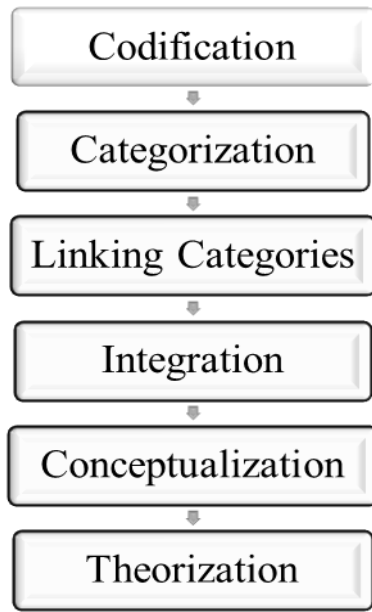

Step 1 – Codification
The objective of codification is to name, label, and summarize the contents of my interviews transcriptions. It involves examining the data line-by-line, searching for concepts, sub-categories, and patterns. During this step, I incorporated the coding of each sentence and each incident into codes. My interview transcripts were coded word-by-word, line-by-line, and segment-by-segment. According to Charmaz (2006), grounded theory uses special terms for participant known as 'in vivo codes.' They serve as a symbolic marker of the participant's speech and meaning, serving to crystallize and condense meanings. I experienced that in vivo coding provided an important check on the significance of the codes to the participants' specific meanings and experiences. I did find hundreds of codes and put them in the right margin of each of my transcript. Paillé (1994) has suggested that the researcher should limit the number and construction of codes, and remain grounded in the data. In this process, I arranged all important words, perceptions, and experiences into organized codes. It was the process of forming all codes. After all codes were formed, the next step is categorization.

Step 2 - Categorization
During categorization process, all codes were viewed in detail and put in the appropriate category, and there were similarities. In this process, the most significant or frequent codes were sorted, synthesized, integrated, and organized. I grouped together all codes that appeared related or that seemed to be the most important for stigma and mental illness. Also, I moved back and forth from codification to categorization. Data were compared to data, and incident to incident, to develop categories. I analyzed codes, regrouped and classified them to create hierarchies. During this process, I employed constant comparison data analysis as suggested by Charmaz (2006) to move across the data, constantly comparing and contrasting in the search for similarities and differences. Because a grounded

theory relies on the constant comparison of data, the researcher's sensitivity to the phenomenon being studied becomes more refined, helping to make sense of the data, name phenomena, extrapolate meanings, and link different parts of the study as they evolve (Paillé, 1994). This method helped to identify overlap between my initial codes and the formation of categories. My analytical process, which included the codification of interviews and categorization of emergent concepts, produced five mutually exclusive categories: *(1) treatments; (2) violence; (3) fear; (4) constructing cursed citizens; and (5) stigmatization.* According to Paillé (1994), each category is mutually exclusive, meaning that each category defines, in rich detail, a specific aspect of analysis.

Table 2: Categories
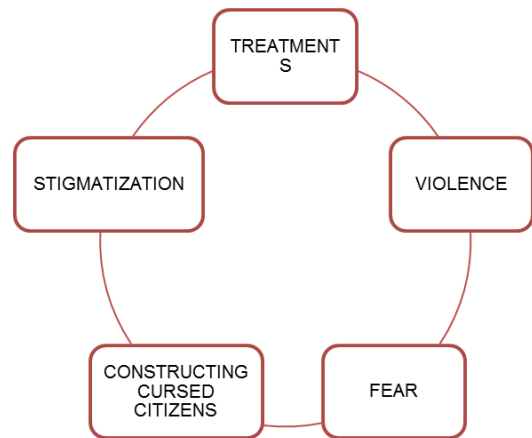
Step 3 - Linking Categories
Linking all categories is the third step of Paillé's grounded theory data analysis. This step is the first phase of 'focused coding' of Charmaz's (2006) analysis. Although the process of linking categories is largely an empirical endeavor, it is nonetheless influenced by theoretical perspectives incorporated into the research by the researcher (Paillé, 1994). In this step, I seek to connect and link the categories of treatments, violence, fear, and constructing cursed citizens together to see the similarities and differences among them, which would be finalized in the conceptualization step (fifth step of analysis). All categories were related to each other. This step also involved specifying the relationships between the categories and concepts. Charmaz (2006) calls it diagramming, where a series of visual diagrams help to explore relationships between categories to discover potential links. During this process, I moved through the categories, subsuming some as sub-categories, leaving others as distinct but linked, and brought them together.

Step - Integration
This step as the second phase of Charmaz' *focused coding'* and Strauss and Corbin (1998) call it as "selective coding, which is the process of integrating and refining categories. In this step, I integrated all categories after the core category had been determined. The main goals of this step in the analysis were to develop an overarching theoretical schema explaining how each of the categories related to each other, and to identify a core category that explained the experiences of participants. During this step of analysis, I looked back to re-read my memos and my field notes to analyze schemas in order to find other

common threads that had not yet been found. As a novice researcher, I found this integration step one of the most difficult parts of the analysis. I was faced with the challenge of pulling all the threads in the analytical research together and connecting all the categories in my memos and field notes to build the framework of a "reasonable" explanation associated with stigma and mental illness.

Step 5 - Conceptualization

Conceptualization step consists of attempting to find the structural organization and relations between categories and Charmaz (2006) calls this the first '*theoretical coding*' phase. It is the process of the development and clarification of the emerged concepts and ideas and of clarifying concepts with words for conceptual definitions. In this step, I finalized the connection and linking among all categories to understand the research phenomenon in all of its complexity. I found in this step that explanatory links were established between the nature of the phenomenon, its causes and consequences for mental illness and the stigmatization process. This step refined concepts and categories for theory development and helped me to identify "*constructing cursed citizens*" as a basic social process.

Step 6 - Theorization

Theorization step is the process of construction or substantiating the theory (Paillé 1994). A substantive theory in grounded theory refers to a set of explanations that accounts for phenomena within a specific or substantive area. Theorizing is not something that is done at the end of the study, but rather represents the product of a rigorous analytical process (Paillé, 1994). However, according to Charmaz (2006), a researcher adopting grounded theory does not have to create/produce a theory. Writing a theory is based on the interrelationship of the categories from the previous steps of analysis. This study has resulted in my own representation on stigma and mental illnesses that emerged from examining participants' perspectives on their own experiences. This substantive understanding was produced after the researcher followed each of the data analysis steps. It is context-specific and is concerned with the process from the perspective of these adults participating in this study. Finally, I created a schema that reflects the empirical data used to answer my research questions.

Rigor

There are different criteria of rigor that exist in scientific inquiry. For example, Lomberg and Kirkevold (2003) use the concepts of fit, work, relevance and modifiability to judge the quality of a theory. There are four different criteria, including credibility, transferability, dependability and confirmability (Denzin and Lincoln, 2000). In this study, I adapted and employed Chiovitti and Piran's (2003) rigor requirements for qualitative data, which include *credibility, auditability, and fittingness*.

Credibility refers to the use of accurate descriptions or interpretations of a human phenomenon so that the individuals having the experience would recognize their experience from the descriptions, or others would be able to recognize the experience after having read about it (Sandelowski, 1986). Credibility is used "to assess the truth-value of findings by addressing the inductive nature of grounded theory and allowing participants to speak

through the data and to ensure that the phenomenon investigated was accurately identified and delineated" (Chiovitti and Piran, 2003, p. 430). Credibility was enhanced in this study by gathering data from multiple sources: interviews (which were transcribed verbatim), field notes, and memos. Field notes and memos were not transcribed but used to contextualize the data gathered during the interviews. Staying close to the data by word-by-word, line-by-line, and adopting in vivo coding, facilitated the construction of a grounded theory that reflects the participants' experience of stigma and mental illness. Keeping raw data, field notes, and memos have provided an audit trail of the various steps, from data to analysis and interpretation. In addition, during data analysis, I met personally and contacted via email my research supervisor regularly every two weeks to review all of the material collected. I also discussed with him the analysis process and other issues that arose related to my data collection and data analysis process. Furthermore, my interview transcripts, which had been translated to English, were read and reviewed by my supervisor.

Auditability is the ability of other researchers to follow the methods and conclusions of the researcher (Chiovitti and Piran, 2003). Auditability relates to consistency of findings, meaning that another researcher can clearly follow the thought processes used by the researcher in the study and can arrive at a comparable conclusion (Sandelowski, 1986). Auditability is enhanced by indicating the criteria used to formulate the researcher's thinking, and by detailing how and why the participants in the study were chosen (Chiovitti and Piran, 2003). I carefully documented the research process and findings. I kept a journal, tracking all the subjective decisions that I made and their rationale. All decisions were documented throughout the research process.

Fittingness is also referred to as transferability; it "pertains to the probability that the research findings have meaning to other similar situations" (Chiovitti and Piran, 2003, p. 433). Another definition is that study findings are meaningful and applicable to readers in terms of their own experiences, and the findings are reflective of the life experiences being studied (Sandelowski, 1986). According to Chiovitti and Piran (2003), fittingness can be accomplished by delineating the scope of the research in terms of participants, setting, and level of theory generated, and by describing how the literature relates to each category that emerged in the theory. During the coding process, all coded data were reviewed by my research supervisor, providing an external check to the findings. According to Sandelowski (1986), this independent analysis of data by another researcher or expert serves to validate findings.

Conclusion

This paper is based on the process of Constructivist Grounded Theory (CGT) research method used in a study to understand mental illness and stigma among Indonesian Adults. Paillé's method of grounded theory data analysis was used to organize and manage data. According to Heath and Cowley (2004), there are three main stages in grounded theory data analysis (*initial coding, intermediate phase, and final development*). Charmaz's constructive grounded theory starts with initial coding, focused coding (intermediate phase), and theoretical coding (final development). Paillé's method mirrors Charmaz's method

by adapting the basic principles of constructivist grounded theory and displaying the data analysis in a sequential form: codification, categorization, linking categories, integration, conceptualization, and theorization. Similarly, Paillé's data analysis can be divided into three stages: codification and categorization (initial coding), linking categories and integration (intermediate phase), conceptualization and theorization (final development).

Paillé's process of grounded theory data analysis has shown an excellent strategy in this research. The accurate application of Paillé's data analysis strategy in CGT have provided an exhaustive description to the body of knowledge about human social process and it would be an effective and good strategy of data analysis to establish the basis for future grounded theory research.

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