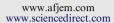African Federation for Emergency Medicine

African Journal of Emergency Medicine

Orientation among multiple truths: An introduction to qualitative research

Orientation à travers les vérités multiples: Une introduction à la recherche qualitative

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Abstract In order to provide some guidance for the researcher unfamiliar with qualitative research, this article compares quantitative and qualitative research, and introduces a number of qualitative methods. Aspects of methodological rigor are also presented as well as an example of qualitative data analysis using content analysis. Qualitative research methods explore, in a holistic fashion, the complex reality constructed by individuals in the context of their everyday worlds. Qualitative research is based on the subjective, looking at human realities instead of concrete realities of objects. When conducting a qualitative study the researcher is part of the study and is, in fact, the research instrument. The qualitative researcher embraces the ontological assumption of multiple truths, multiple realities, i.e., persons understand reality in different ways that reflect individual perspectives.

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Abstract Afin de fournir quelques conseils au chercheur peu familier avec la recherche qualitative, cet article compare la recherche quantitative et la recherche qualitative, et présente un certain nombres de méthodes qualitatives. Des aspects de la rigueur méthodologique sont aussi présentés ainsi qu'un exemple d'analyse des données qualitatives utilisant une analyse de contenu. Les méthodes de recherche qualitative explorent, de manière globale, la réalité complexe construite par les individus dans le contexte de leur environnement quotidien. La recherche qualitative est basée sur la subjectivité, s'intéressant aux réalités humaines plutôt qu'aux réalités concrètes des objets. En menant une étude qualitative, le chercheur fait partie de l'étude et, de fait, il en estl'instrument de recherche. Le chercheur qualitatif part de l'hypothèse ontologique des vérités multiples, des réalités multiples, c.à.d. que les personnes perçoivent la réalité de différentes façons qui reflètent les perpectives individuelles.

African relevance

- Many researchers have received education in quantitative methods, however few have had formal training in qualitative research.
- There is limited qualitative research done in emergency care in Africa.
- Due to the resource limited and multi-cultural setting of Africa, qualitative research provides an opportunity to explore these unique experiences.

What's new?

- Qualitative research explores reality as constructed by individuals.
- Qualitative researchers embrace the ontological assumption of multiple truths.
- Qualitative results are textual accounts of the individual's life/world.
- Qualitative results reflect the diversity and variation of lived experiences.

Staff from the same emergency centre (EC) were attending a planning session concerning quality assurance and improvement of routines. All agreed that in order to improve routines baseline data needed to be collected. This led to discussions on how to choose the most suitable research design. One staff member, who was also a researcher, described some of the difficulties that she had been confronted with while leading a pilot project investigating activities of family members who accompany patients to the EC. Background to the study was the steady stream of complaints from staff who felt that family members were troublesome, in the way, and not doing anything helpful for the patient. The opinion among staff was that family members accompanying a patient were in general a hindrance to nursing and medical treatment.

The researcher designed a project investigating family members accompanying a patient to the EC that entailed keeping track of how many family members accompanied patients, how long they stayed on the EC and what they did during the visit. Data were collected both by staff keeping a tally of family members and by family members filling in a short questionnaire before they left the EC. The questionnaire had one space for filling in times for arrival and departure from the EC plus a checklist of activities family members could mark indicating what they had done during their visit. This checklist had been formulated during a meeting where staff had come to a consensus about what activities they see family members doing during their visit to the EC.

The researcher described how surprised she had been when she saw that in an overwhelming majority of returned questionnaires hardly any items were checked off. Her colleagues took this as proof that most family members did not provide any positive elements to patient care in the EC. But on one of the returned questionnaires there was a note on the back;

> *"I'm sorry. I haven't ticked anything on your checklist...but that is because you didn't list anything that I did. You had no checklist for: "held his hand", "told him I love him", or "contacted and kept in contact with the rest of our family". The most important thing I did was that I was with him. Maybe you don't think that is doing anything. I think these things are just as, NO, more important than anything on your list."*

After reading that note the researcher realized that the study had not been measuring what they thought they had been measuring, i.e. family members' activities. They only were getting confirmation that family members were not conducting activities staff thought were important or appropriate.

This anecdote illuminates many of the challenges researchers face when planning projects and choosing the most appropriate research designs and methods. In the anecdote above, the project was based on quantitative methodology, i.e. analysis based on numeric values, frequencies, and statistics. However, the note on the back of one questionnaire made the researcher realize that her quantitative design had probably only reflected opinions of staff and did not provide complete information about what family members did during their visit to the EC. The researcher asked herself what she could do to increase her understanding of family members' activities and realized that in order to answer the research question she needed to explore family members' perspectives. She therefore complemented her quantitative study with a qualitative study where she interviewed family members' about their perceptions of accompanying a patient to the EC. This example illustrates how quantitative and qualitative research can complement

each other in order to avoid drawing inaccurate conclusions based on incomplete data or by missing important aspects.

Comparing quantitative and qualitative research

While many researchers have received education in quantitative methods, few have had formal training in the methods of qualitative data analysis. However, many researchers working within the sphere of quantitative research have become interested in the opportunities for knowledge advancement offered by qualitative methods. Qualitative methods sometimes appear quite simple from the outside and researchers without qualitative expertise might dive right in, thinking it merely involves interviewing a few people, reporting what was said and drawing some conclusions. Yet researchers without any background in the underpinnings and basic concepts of qualitative research might come up sputtering, gasping for air and swearing off qualitative research. What happened? One reason why it can be problematic for uninitiated to grasp qualitative research is that qualitative and qualitative approaches are grounded in two very different paradigms: the positivist paradigm of quantitative research and the so called postmodern or naturalistic paradigm of qualitative research. This is however a simplified view of a complex area that is in constant flux and development. There is growing opinion that this black–white division between qualitative and quantitative research neither correctly depicts the variety of epistemological approaches to research nor is sufficiently open to answering complex research questions, especially those concerning human experience. It is important to note that current trends in research lean toward a less categorical black–white separation and have agreed to disagree about where, or indeed if a line of demarcation can be drawn between qualitative and quantitative research. Mixed methods research and action research are two examples of research conducted in this fertile gray zone. It is the research question that is the lodestar in any research design and not a pre-selected method of investigation.

With these comments in mind, let us compare some of the basic elements of quantitative and qualitative research and the differences between them.

Researchers conducting quantitative studies seek *the* truth and see reality as something "out there", outside themselves. Researchers consider themselves to be objective, separate and detached from the experiment and subject under investigation. Based on these assumptions, experiments are designed with the goal to study objects or phenomena by controlling for variables and context. It is characteristic for goals in quantitative research to reduce, control or predict. The quantitative researcher strives to minimize variation in the studied phenomenon and believes it possible not to influence results. Sampling techniques, therefore, typically seek a large number of participants with attributes as identical as possible, e.g. same age, gender, disability or disease, from a randomly chosen selection of candidates that fall within study parameters. The quantitative researcher believes that knowledge gained through research can be measured and reported numerically. Rigor of a quantitative study is connected to how well the researcher has maintained an objective viewpoint and how free the collected data are from variation. In general, quantitative results are accounts of the most (majority) of the same

(controlled for variables), reported numerically (through statistical manipulation).

Researchers conducting qualitative studies embrace the ontological assumption of multiple truths or multiple realities, i.e., that each person has an understanding of reality from an individual perspective. Qualitative research is based on the subjective, and looks at human realities instead of the concrete realities of objects. The qualitative researcher is part of the study and is, in fact, the research instrument. Qualitative researchers believe that researcher participation enriches the study. Typically, only a small sample is required. Qualitative researchers search for maximum variation when selecting participants and generating data. Participants are purposely sought who, (1) have experience of the phenomenon under investigation, and (2) can answer the research question. Typically, results are reported in a rich literary style, based on the transcribed narratives which are derived, most commonly, from individual or focus group interviews.

Another difference between quantitative and qualitative research is the freedom researchers have in adapting qualitative study designs or methods. Qualitative designs are referred to as emergent which means they follow where the data and preliminary results are pointing. Qualitative studies seek maximum variation by not controlling for variables as in quantitative research. Sampling techniques might be complemented mid-study to increase variety, for example, through alternative methods of purposive sampling techniques. Moreover, different research groups or schools adapt or develop their own variation of a method, which is especially noticeable in the many variations in analysis involving interpretive/hermeneutic phenomenology.[42,83,239] These adaptations mean that issues of trustworthiness need to be carefully and meticulously described in each study, and it is, thus, important to explore this further.

Different methods in qualitative research

In general, qualitative results are textual accounts of the individual's lifeworld which reflect the diversity of their lived experiences. Qualitative researchers strive to understand patterns, similarities and differences in the representations of participants' lifeworlds, as conveyed through interview transcripts, diaries, media recordings, field observations, etc. Results of qualitative research studies are expressed in a variety of ways, each associated with the methodology used, e.g., essence descriptions (phenomenology), main interpretations (hermeneutics), or comprehensive understandings (phenomenological hermeneutics). Results are written up using very descriptive language, preferably leaning toward the metaphoric and poetic, relating "how things can be experienced" rather than statements about "how it is." It should be emphasized, however, that results of qualitative studies illuminate one version of "truth", one perspective, one voice in this multi-voiced, everyday world, to deepen our understanding of what it means to be human; a changing thing indeed.

One aspect of qualitative research that can be intimidating is the strong philosophical underpinnings that guide and support many qualitative methods, especially phenomenology and hermeneutics. It is beyond the scope of this paper to introduce these philosophical elements. A selection of books,

Table 1 Selected books, articles, and online resources providing information on qualitative methods

Books covering multiple qualitative methods

Barbour R. *Introducing qualitative research: a student's guide to the craft of doing qualitative research*. London: Sage Publications; 2007.[2]

Creswell JW. *Qualitative inquiry and research design. Choosing among five approaches*. Thousand Oaks, CA: Sage; 2007.[9]

Polit D, Beck, CT (editors). *Nursing research: generating and assessing evidence for nursing practice (International Edition)*. Philadelphia: Lippincott, Williams, Wilkins; 2012.[33]

Streubert H, Carpenter DR (editors). *Qualitative research in nursing*. Philadelphia: Lippincott, Williams & Wilkins; 2011[37]

Wertz F, Charmaz K, McCullen L, Josselson R, Anderson R, McSpadden E (editors). *Five ways of doing qualitative analysis*. New York: The Guilford Press; 2011.[40]

Books and articles focusing on a particular area of qualitative methodology

Phenomenology and hermeneutics

Dahlberg K, Dahlberg HK. Dialogue. Description vs. interpretation – a new understanding of an old dilemma in human science research. *Nurs Philos* 2004;**5(3):**268–73.[10]

Dahlberg K, Dahlberg H, Nyström M. *Reflective lifeworld research*. 2nd ed. Lund: Studentlittertur; 2008.[11]

Dowling M. From Husserl to van Manen. A review of different phenomenological approaches. *Nurs Stud* 2007;**44:**131–42.[12]

Lindseth A, Norberg A. A phenomenological hermeneutical method for researching lived experience. *Scandinavian Journal of Caring Sciences* 2004;**18:**145–153.[28]

Van Manen M. *Researching lived experience: human science for an action sensitive pedagogy*. London: The Althouse Press; 1997.[39]

Ethnography

Fetterman D. *Ethnography: step by step*. 3rd. ed. Thousand Oaks: Sage Publications; 2010.[14]

Gobo G. *Doing ethnography*. Thousand Oaks: Sage Publications; 2008.[17]

Kiefer C. *Doing health anthropology: research methods for community assessment and change*. New York: Springer Publishing; 2007.[22]

Bazzano AN, Kirkwood BR, Tawiah-Agyemang C, Owusu-Agyei S, Adongo PB. Beyond symptom recognition: care-seeking for ill newborns in rural Ghana. *Trop Med Int Health* 2008;**13(1):**123–28.[3]

Grounded theory

Charmaz K. "Discovering" chronic illness: using grounded theory. *Social Science and Medicine* 1990;**30(11):**1161–72.[6]

Charmaz K. *Constructing grounded theory: a practical guide through qualitative analysis*. Thousand Oaks: Sage Publications; 2006.[7]

Content analysis

Elo S, Kyngäs H. The qualitative content analysis process. *J Adv Nurs* 2007;**62(1):**107–15.[13]

Graneheim UH, Lundman B. Qualitative content analysis in nursing research: concepts, procedures, and measures to achieve trustworthiness. *Nurse Educ Today* 2004;**24:**105–12.[18]

Hsieh H-F, Shannon S. Three approaches to qualitative content analysis. *Qual Health Res* 2005;**15(9):**1277–88.[20]

Qualitative interviewing

Gubrium J, Hostein J. *Handbook of interview research: context and method*. Thousand Oaks: Sage Publications; 2001.[19]

Kvale S, Brinkman S. *InterViews: learning the craft of qualitative research interviewing*. 2nd ed. London: Sage Publications; 2009.[26]

Kitzinger J The methodology of focus groups: the importance of interaction between research participants. *Sociol Health Illn* 1994;**16:**103–21.[23]

Kitzinger J. Introducing focus groups. *Br Med J* 1995;**311:**299–302.[24]

Kreuger R, Casey MA. *Focus groups: a practical guide for applied research*. Thousand Oaks: Sage Publications; 2009.[25]

Trustworthiness and rigor

Lincoln YS, Guba EG. *Naturalistic inquiry*. Newbury Park, CA: Sage Publications; 1985.[27]

Rolfe G. Validity, trustworthiness and rigour: quality and the idea of qualitative research. *J Adv Nurs* 2006;**53(3):**304–10.[35]

Shenton AK. Strategies for ensuring trustworthiness in qualitative research projects. *Educ Inform* 2004;**22:**63–75.[36]

Links to open online resources

Phenomenology Online. © 2011 van Manen, http://www.phenomenologyonline.com/

Center for Qualitative Research ©2011 Bournemouth University, http://www.bournemouth.ac.uk/cqr/rescqrlnk.html

The Qualitative Report Copyright 1990-2011. Nova Southeastern University, Florida and Ronald J. Chenail, http://www.nova.edu/ssss/QR/web.html

International Journal of Qualitative Methods, http://ejournals.library.ualberta.ca/index.php/IJQM/index

Methodspace. ©2011 Sage, http://www.methodspace.com/page/links-qualitative-research

Books tips

Frank A. *The wounded storyteller: body, illness, and ethics*. Chicago: University of Chicago Press 1995[15]

Mattingly C. *Healing dramas and clinical plots. The narrative structure of experience*. Cambridge: Cambridge University Press; 1998.[30]

Polkinghorne DE. *Narrative knowing and the human sciences*. Albany, NY: State University of New York Press; 1986.[34]

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articles and online resources for further reading about qualitative methods is provided in Table 1.

For the novice, differences between the various qualitative methods might be perceived as daunting. Refer to Table 2 for a comparison of the different qualitative research methods and explore further the references provided in Tables 1 and 2 if more information is needed.

Not only are there differences between different methods, but there are differences between how these methods are understood and defined in different parts of the world. For example, in European literature, phenomenological methods are depicted as purely descriptive and do not involve interpretation, while hermeneutical methods involve interpretation and explanation. Studies that combine phenomenology and hermeneutics (description and interpretation of phenomena) will include both these terms in the name of the method, e.g. "phenomenological hermeneutics". However, in North America, it is common that descriptive qualitative methods are

Table 2 Comparison of four different qualitative methods.

Qualitative research method	Brief definition	Research articles conducted in an African context
Phenomenology & hermeneutics	It is the study of phenomena and lived experience and it asks, "*What is this kind of experience like*?", "*What meaning does this experience carry*?" It is the study of lived experience emphasizing pure descriptions and descriptions of essences (phenomenology), interpretations of lived experience emphasizing researchers' pre-understandings (hermeneutics), or a combination of the above (e.g., phenomenological hermeneutics).	Balaile et al.[1]; Brysiewicz[5]; Makoae[29]
Grounded theory	It is the study that attempts to reach a theory or conceptual understanding through inductive process, theories are "grounded" in the data. Data collection continues until "data saturation" is reached.	Orner et al.[31]; Kapungwe et al.[21]
Ethnography	It is the study of people in their 'fields' or everyday settings, while trying to capture the participants' social meanings and ordinary activities. The researcher is actively involved.	Bazzano et al.[2]; Gafos et al.[16]
Content analysis	It is the analysis of what the collected data/text talk about. Qualitative content analysis deals with relational aspects, involving interpretation of the underlying meaning of the text.	Coutsoudis et al.[8]; Ujiji et al.[38]

collectively called "phenomenology" and can involve both descriptive and interpretative moves. The easiest way to get around these differences is to check which terms are used in the article's abstract, aim, and/or methods section, e.g., terms "description", "understanding", "interpretation" and "explanation".

Data analysis and reporting findings in qualitative research

One way to untangle this apparently confusing arena of research is to look at the very basic and practical steps taken by the majority of qualitative researchers when studying a phenomenon. Despite differing philosophical underpinnings or theoretical frameworks that guide overarching analysis processes, there are a few basic steps that are shared in most methods. These are: (1) recruiting persons to the study who can answer the research question; (2) recording interviews with these persons; (3) transcribing the interview to text; and (4) analyzing the text. Hands-on analysis is a process of reading, re-reading and "immersing" oneself in the text. The analysis typically includes immersion in the data, coding sections of text and then combining codes into categories/themes. The researcher asks the text questions and searches for patterns of similarity and differences that connect different elements in the data, such as passages in a transcribed interview. The analysis process swings back and forth between the text, the researcher's knowledge/experience and theories and previous research in a spiraling process that builds new understandings. This is often referred to as the hermeneutic circle or spiral.

The researcher attempts to capture the holistic and dynamic aspects of human life and present these within the context of the research participants (i.e., within the world that is unique to the participant). One major pitfall for the novice is underestimating the time the qualitative research process requires as it

is often a very time consuming process. It should also be noted that computer software for qualitative analysis does not analyze data (it is used for organizational support) and the researcher remains the research instrument. However, there are software packages such as QSR NVivo software, which do offer timesaving opportunities. These allow the researcher to upload raw data, such as transcribed interviews, that can be then be coded and cross-referenced in ways that facilitate organizing research data for easy retrieval.

Let us take a closer look at one very common method in qualitative analysis which is known as qualitative content analysis, sometimes referred to as latent content analysis. Because this method does not have roots in a particular philosophical tradition, it is a good starting point for first efforts at qualitative research. In Table 3 we provide an illustration of qualitative content analysis of an excerpt from an interview text based on analysis steps as described by Graneheim and Lundman.[18] The first step is to read and re-read the transcribed interview to get a feeling of the whole, i.e., what the text is talking about. Already here the qualitative researcher may start to recognize patterns in the data. In the second step, the text is divided into smaller parts called meaning units. A meaning unit contains aspects related to each other through their content or context and always conveys one central meaning. Meaning units can be as small as a few words or as large as several sentences or even paragraphs. The third analysis step is the process of condensation, whereby the meaning units are shortened, but still retain the central, core meaning. The fourth step involves labeling each condensation with a code. In the fifth step, the coded condensations are grouped into categories based on how the different codes are related. A category answers the question, "What?" Some researchers choose to stop analysis at this point of having organized data into categories. However, there is still one final analysis step, which is the

Table 3 Example of qualitative content analysis as described in Graneheim and Lundman.[18]

Excerpts from an interview with a family member ("I") who had witnessed abusive situations between two relatives; an older man ("he") who provided care for his wife, who suffered from mental and physical disabilities ("she")

Meaning unit	Condensation	Code	Category	Theme
I mean, she can't walk any more. She is completely blind. She is so vulnerable	She cannot walk, is blind, and so vulnerable	Disabled and vulnerable	Vulnerability of the abused	Standing in-between vs. taking sides
And then I know, that when he is tired, he doesn't take care of her in the way that she would actually need	He doesn't take care of her in the way she needs when he is tired	Defending the offender	Situation creates the abuser	Standing in-between vs. taking sides
And I know this isn't a person who in any way drinks too much. But I know that these days he buys a little wine. He drinks too much	I know he doesn't drink too much, but these days he drinks too much wine	Defending the offender	Situation creates the abuser	Standing in-between vs. taking sides
He goes to sleep. And she lies there wet with urine	While he sleeps off she lies in her own urine	Neglect due to alcohol consumption	Vulnerability of the abused	Standing in-between vs. taking sides
She doesn't get the care she wants. Then she gets worked up, screaming, kicking, making a scene	She gets agitated and makes a scene	Wife's role in the abusive situation	Spouse's role in the abusive situation	Being caught in a cycle of violence
He goes crazy then	He responds and "goes crazy"	Husband's role in the abusive situation	Spouse's role in the abusive situation	Being caught in a cycle of violence
After these episodes I think is when I have seen the bruises	After these episodes I have seen bruises	Evidence of abuse	Results of the abusive situation	Being caught in a cycle of violence
And then it is old skin and she has an easy time bruising in general	Old skin bruises easily	Victim's own fault	Situation creates the abuser	Standing in-between vs. taking sides
But that is what I see and that is what I feel. It is powerlessness	This is what I see and I feel powerless	Feeling powerless	The witness as powerless	Standing in-between vs. taking sides

creation of themes. A theme can be considered as a red thread of underlying meaning that ties the data together. Themes are not mutually exclusive and condensations, codes and categories can fit into more than one theme. A theme answers the question, "Why?" and is expressed in an active voice.

Often a table exemplifying the process of abstracting meaning units to category and theme level is provided in the method section of the research article to strengthen the trustworthiness of the analysis itself. It is typical to report the results theme by theme in the results section of the article and this often includes describing all the relevant categories under each theme heading. Major points are supported by including quotes from the transcribed interviews. Including raw data in the form of quotes not only strengthens the trustworthiness, but specific quotes are chosen that will move the reader. Results are, therefore, related in such a way as to touch those reached out to in the research and to vicariously carry readers to a broader understanding of the phenomenon, experience or concept focused upon in the study.

General issues regarding rigor in qualitative research

Just as in quantitative research, the academic rigor of the research namely its "validity and reliability" is extremely important to the qualitative researcher and, therefore, demands much attention. Depending on the type of qualitative research, there are differing perspectives on how to address the quality or rigor. However, all agree that the research has to demonstrate 'truth value' and this should be consistent in the terms and methods used to demonstrate this. The trustworthiness of the study is supported by providing examples of raw data (often interview quotes) and an analysis process that exemplifies the results. Trustworthiness is also supported by meticulously describing the methodological steps. Sometimes participants themselves are called upon to judge the trustworthiness of the study, e.g., the researcher returns to the participants and requests them, as "experts", to confirm the authenticity of the conclusions. This is referred to as member checking. However, most typically in qualitative research, it

Table 4 Guidelines regarding trustworthiness.[*]

Credibility (in preference to internal validity)	Transferability (in preference to external validity/generalizability)	Confirmability (in preference to objectivity)	Dependability (in preference to reliability)
Confidence in the 'truth' of the findings. Some examples of ways to achieve this are; -Prolonged Engagement (building up a relationship with the participants, developing familiarity with them) -Triangulation (use of different sources of data i.e. interviews, focus groups, record review etc.) -Peer scrutiny (discussion with peers regarding aspects of the research) -Member-checking (participants are asked to check if the words used by the researcher accurately capture what they intended to say) Including representative quotations in results	Showing that the findings have applicability in other contexts. This can be carried out by ensuring that the researcher provides "thick descriptions" of the phenomenon under discussion. This is to allow the reader to gain a proper understanding of it so they can decide it's applicability to their own context -Providing a description of participants	A degree of neutrality or the extent to which the findings of a study are shaped by the respondents and not researcher bias, motivation, or interest. Some examples of ways to achieve this are; -Audit trail (step-by-step course of the research) -Researcher admits their own predispositions – i.e. the decisions they made and their beliefs underpinning those decisions -Triangulation	Showing that the findings are consistent and could be repeated. This can be carried out by ensuring the processes within the research have been reported in detail so that they could be replicated by another researcher -Peer scrutiny to minimize inconsistencies and achieve clear and logical documentation

[*] From Lincoln and Guba[27] and Shenton[36]

is research consumers who have the responsibility of judging the trustworthiness of the results and conclusions. Lincoln and Guba's Evaluative Criteria establishes guidelines regarding trustworthiness that may prove useful to the novice qualitative researcher to use as a starting point namely; credibility, transferability, dependability and confirmability. Refer to Table 4.

Conclusion

It is important for the novice qualitative researcher to appreciate the complexities of qualitative research and to understand that it has its own "language". This article has provided a comparison of quantitative and qualitative research and to explore a number of qualitative methods, in order to provide some guidance for the researcher who is unfamiliar and curious about qualitative research.

Appendix A. Short answer questions

1. Which of the following are associated with studies using qualitative methodology?
   a. Descriptive statistics.
   b. Recorded interviews.
   c. Questionnaires.
   d. Controlling for variables.
   e. Purposive sampling.

2. Qualitative or latent content analysis is a very common basic qualitative method. Which of the following are involved in this method?
   a. Identifying meaning units.
   b. Controlling for variables.
   c. Condensation and coding.
   d. Minimizing variation.
   e. Creation of themes.

3. Credibility, transferability, dependability and confirmability are four evaluative criteria used to judge the trustworthiness and academic rigor of qualitative studies. Which of the following substantiate a study's credibility?
   a. Having built up a relationship with the participants.
   b. Triangulation.
   c. Peer scrutiny.
   d. Member-checking.
   e. Including representative quotations in results.

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