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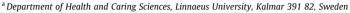
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#### **COMMENTARY**

## A hands-on guide to doing content analysis

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#### ABSTRACT

There is a growing recognition for the important role played by qualitative research and its usefulness in many fields, including the emergency care context in Africa. Novice qualitative researchers are often daunted by the prospect of qualitative data analysis and thus may experience much difficulty in the data analysis process. Our objective with this manuscript is to provide a practical hands-on example of qualitative content analysis to aid novice qualitative researchers in their task.

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#### African relevance

- Qualitative research is useful to deepen the understanding of the human experience.
- Novice qualitative researchers may benefit from this hands-on guide to content analysis.
- Practical tips and data analysis templates are provided to assist in the analysis process.

#### Introduction

There is a growing recognition for the important role played by qualitative research and its usefulness in many fields, including emergency care research. An increasing number of health researchers are currently opting to use various qualitative research approaches in exploring and describing complex phenomena, providing textual accounts of individuals' "life worlds", and giving voice to vulnerable populations our patients so often represent. Many articles and books are available that describe qualitative research methods and provide overviews of content analysis procedures [1–10]. Some articles include step-by-step directions intended to clarify content analysis methodology. What we have found in our teaching experience is that these directions are indeed very useful. However, qualitative researchers, especially novice

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researchers, often struggle to understand what is happening on and between steps, i.e., *how* the steps are taken.

As research supervisors of postgraduate health professionals, we often meet students who present brilliant ideas for qualitative studies that have potential to fill current gaps in the literature. Typically, the suggested studies aim to explore human experience. Research questions exploring human experience are expediently studied through analysing textual data e.g., collected in individual interviews, focus groups, documents, or documented participant observation. When reflecting on the proposed study aim together with the student, we often suggest content analysis methodology as the best fit for the study and the student, especially the novice researcher. The interview data are collected and the content analysis adventure begins. Students soon realise that data based on human experiences are complex, multifaceted and often carry meaning on multiple levels.

For many novice researchers, analysing qualitative data is found to be unexpectedly challenging and time-consuming. As they soon discover, there is no step-wise analysis process that can be applied to the data like a pattern cutter at a textile factory. They may become extremely annoyed and frustrated during the hands-on enterprise of qualitative content analysis.

The novice researcher may lament, "I've read all the methodology but don't really know how to start and exactly what to do with my data!" They grapple with qualitative research terms and concepts, for example; differences between meaning units, codes, categories and themes, and regarding increasing levels of abstraction from raw data to categories or themes. The content analysis adventure may now seem to be a chaotic undertaking. But, life is messy, complex and utterly fascinating. Experiencing chaos during

analysis is normal. Good advice for the qualitative researcher is to be open to the complexity in the data and utilise one's flow of creativity.

Inspired primarily by descriptions of "conventional content analysis" in Hsieh and Shannon [3], "inductive content analysis" in Elo and Kyngäs [5] and "qualitative content analysis of an interview text" in Graneheim and Lundman [1], we have written this paper to help the novice qualitative researcher navigate the uncertainty in-between the steps of qualitative content analysis. We will provide advice and practical tips, as well as data analysis templates, to attempt to ease frustration and hopefully, inspire readers to discover how this exciting methodology contributes to developing a deeper understanding of human experience and our professional contexts.

#### Overview of qualitative content analysis

Synopsis of content analysis

A common starting point for qualitative content analysis is often transcribed interview texts. The objective in qualitative content analysis is to systematically transform a large amount of text into a highly organised and concise summary of key results. Analysis of the raw data from verbatim transcribed interviews to form categories or themes is a process of further abstraction of data at each step of the analysis; from the manifest and literal content to latent meanings (Fig. 1 and Table 1).

The initial step is to read and re-read the interviews to get a sense of the whole, i.e., to gain a general understanding of what your participants are talking about. At this point you may already start to get ideas of what the main points or ideas are that your participants are expressing. Then one needs to start dividing up the text into smaller parts, namely, into meaning units. One then condenses these meaning units further. While doing this, you need

**Table 1** Glossary of terms as used in this hands-on guide to doing content analysis.

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Condensation	Condensation is a process of shortening the text while still
	preserving the core meaning
Code	A code can be thought of as a label; a name that most exactly
	describes what this particular condensed meaning unit is
	about. Usually one or two words long
Category	A category is formed by grouping together those codes that
	are related to each other through their content or context. In
	other words, codes are organised into a category when they
	are describing different aspects, similarities or differences, of
	the text's content that belong together
	When analysis has led to a plethora of codes, it can be helpful
	to first assimilate smaller groups of closely related codes in
	sub-categories. Sub-categories related to each other through
	their content can then be grouped into categories
	A category answers questions about who, what, when, or
	where? In other words, categories are an expression of
	manifest content, i.e., what is visible and obvious in the data
	Category names are factual and short
Theme	
meme	A theme can be seen as expressing an underlying meaning,
	i.e., latent content, found in two or more categories.
	Themes are expressing data on an interpretative (latent)
	level. A theme answers questions such as why, how, in what
	way, or by what means?
	A theme is intended to communicate with the reader on both
	an intellectual and emotional level. Therefore poetic and
	metaphoric language is well suited in theme names to
	express underlying meaning
	Theme names are very descriptive and include verbs, adverbs
	and adjectives
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<sup>\*</sup> More information found in Refs. [1–3,5]

to ensure that the core meaning is still retained. The next step is to label condensed meaning units by formulating codes and then grouping these codes into categories. Depending on the study's aim and quality of the collected data, one may choose categories as the highest level of abstraction for reporting results or you can go further and create themes [1–3,5,8].

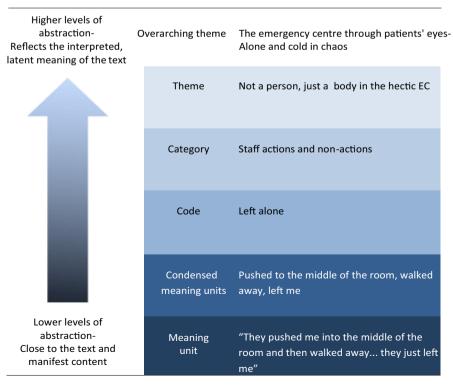


Fig. 1. Example of analysis leading to higher levels of abstraction; from manifest to latent content.

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