# FRAMEWORK ANALYSIS: A WORKED EXAMPLE FROM A MIDWIFERY RESEARCH

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## ABSTRACT

**Objective:** Framework analysis is a pragmatic approach for real-world investigations and has been commonly used in the health care research. Although the theoretical part of framework analysis has been well documented, there is limited literature describing its practical use. The objective of this paper is to demonstrate a systematic and explicit guidance in using framework analysis by giving an example of a study exploring women's experience of postnatal depression.

**Methods:** Data presented in this paper comes from semi-structured interviews of 33 women (from three different cultural backgrounds) attending for child or postnatal care in six purposively selected maternal and child health (MCH) clinics in Kuala Lumpur.

**Results:** Data were analysed using framework analysis, which consists of three interrelated stages. In the first stage (data management), a careful selection of the data (transcripts) to be reviewed was made. The initial categories were developed based on the selected transcripts and the initial themes were decided (known as a thematic framework). In the second stage (descriptive accounts), the thematic framework was investigated to identify any linkage and similarity between one category to another. The third stage of the analysis (explanatory accounts) involved checking exactly how the level of matching between the phenomena was distributed across the whole set of data. Using framework analysis, four themes were identified to explain the women's experience of postnatal depression namely *the changes*, *causal explanations*, *dealing with postnatal depression*, and *perceived impacts*.

**Conclusions:** The details of each stage of the analysis were explained to guide researchers through essential steps in undertaking framework analysis. Health care researchers may find a worked example addressed in this paper as useful when analysing qualitative data.

**Keywords:** framework analysis, women, postnatal depression, qualitative

## Introduction

Qualitative data analysis is a conceptual process of bringing a meaning to the collected qualitative data into a set of understanding and explanation of a studied phenomenon. This process involves a description, classification and interconnection of phenomena using numerous reflexives, analytical, and inductive strategy (1). While the approach to analyse data varies depending on the theoretical perspectives adopted in the study, qualitative data analysis shared four steps in common. The steps include data collection, data reduction, data displays, and conclusion drawing/verification (2). The amount of qualitative data involves throughout these steps can be overwhelming, therefore, requires proper data management.

Novice qualitative researchers commonly require a systematic and explicit guidance in the process of qualitative data analysis (3). Moreover, the procedures for qualitative data analysis have been criticized as less rigorous, lack of detail, and practised in casual and unsystematic ways (4). There is a need to enhance transparency within qualitative data analysis, so that the process of generating qualitative findings are well explained, thereby improving the trustworthiness of the findings.

The most common methods used in qualitative data analysis include thematic analysis and framework analysis. Thematic analysis is referred to as 'a method for identifying, analysing and reporting patterns (themes) within data' (5). Thematic analysis is an independent and reliable type of qualitative data analysis that can be used to analyse a large amount of qualitative dataset (6). It permits researchers to explore transcripts analytically and categorise the participants' description into relatively small units of contents (7). The most important characteristic of thematic analysis is that it allows researchers to analyse the participants' transcripts without overlooking their context (8). However, thematic analysis has been criticised as fragmenting the original data and may lead to misinterpretations of the data and has no clear and concise guidelines, thereby critics suggest the findings are subjective and lack of transparency (3).

Framework analysis addresses the criticisms of thematic analysis. Whilst framework analysis shares similarities with thematic analysis, particularly when recurring and emerging themes are identified, it offers transparency and verified associations between the stages of the analysis (5, 9). Unlike the grounded theory approach, framework analysis is less focus on theory as a product of research and is a useful method to address specific questions (10). As such, framework analysis can be flexible in terms of allowing data collection and analysis to run in tandem and consecutively with a structured approach to answer the research questions (11).

Framework analysis was developed by social policy researchers in the United Kingdom. It is a pragmatic approach for real-world investigations and has been commonly used in health care research such as in nursing (10), midwifery (12), and health psychology (13-14). Although the theoretical part of framework analysis has been well documented (11,15), there is limited literature describing its practical use. The objective of this reflective article is to demonstrate a systematic and explicit guidance in the process of qualitative data analysis using framework analysis. In doing so, this article provides descriptions and discussion of using framework analysis to analyse data from a study exploring women's experience of postnatal depression. It is beyond the scope of this article to discuss the main findings in-depth.

Taking Malaysia as a sample of a multicultural country, Malaysian women (which consists of three main cultural backgrounds namely Malay, Chinese, and Indian) were recruited to understand their experience of postnatal depression, explore their views on the causes of postnatal depression, understand their experiences of care and what they perceive may help them to manage their symptoms, and explore their views on potential interventions for postnatal depression.

## Methods

Semi-structured interviews were carried out on 33 women (from three different cultural backgrounds) attending for child or postnatal care in six purposively selected maternal and child health (MCH) clinics in Kuala Lumpur, Malaysia. The interviews were conducted between 45-60 minutes by the first author either at their home, in a private and quiet room at the respective clinic or at another location of the women's wish. The field notes were written and maintained immediately after each interview session to reflect the participants' emotions and non-verbal communications (16). Data were analysed using framework analysis. Framework analysis was chosen to underpin data analysis in this study because it (i) is appropriate to analyse cross sectional descriptive data, therefore, it allows different aspect of concepts understudied phenomenon to be captured, (ii) offers transparency in the interpretation process (9), and (iii) includes interconnected stages in the analysis process hence, enabling the researcher to move forward and backward across the data until the final themes were developed.

## Results

The approach of framework analysis used in this study was adopted from Ritchie and Lewis (9) who described the three interrelated stages involved namely the i) data management ii) descriptive accounts, and iii) explanatory accounts.

Data management

The purpose of the data management stage was to construct a thematic framework. Applying the data management phase to this study, the steps as suggested by Ritchie and Lewis (9) are as followed: familiarisation with raw data, deciding initial themes or categories and summarising or synthesising the data.

*Familiarisation with raw data*

This is the first step in the framework analysis. Familiarisation with raw data builds a foundation of the framework structure. At this stage, a careful selection of the data (transcripts) to be reviewed was made to ensure diversity of the participants' characteristics and circumstances. To identify any potential gaps or overemphasis in the dataset, the sampling strategy and the profile of all participants were re-examined (9). Only by considering the above factors, a representative framework for the whole dataset can be developed.

The selection of transcripts to build a thematic framework was made based on the representativeness of the multicultural backgrounds. Although other factors may be relevant and associated with the experience of postnatal depression, the cultural background was considered as the most important based on the research questions of: 'Do women's perceptions and causal explanations of postnatal depression differ across different cultural backgrounds within Malaysia? If so, how does it differ?' After reviewing the whole dataset, a total of nine transcripts were chosen (three women from each cultural background) to represent three main cultural backgrounds in Malaysia. This was to ensure that a range of different cases was reviewed, the data were rich, deep and diverse.

To become more familiar with the data, the important issues and recurrent points written in the selected transcripts were jotted down. This process was facilitated using a coding matrix. The process of labelling each relevant line was conducted manually for the first three transcripts. The second and the third author reviewed the same transcripts. Table 1 shows the sample of the coding matrix used to identify codes and categories in the data management stage. The initial categories were the final product of this stage.

**Table 1: Coding matrix used to identify code and categories**

*Raihana, a 28-year-old Malay lady, first time mother with a two-month-old baby, housewife, stays with her mother in law during postnatal period.*

| Interview transcript | Description | Preliminary thoughts | Initial category |
|---|---|---|---|
| After giving birth, I spoke less. I didn't even laugh, I didn't enjoy my life, [and] I didn't feel like talking to others. There was a sudden change. No feeling, nothing, like laughing, not at all. | Spoke less, no feelings | Not enjoying life as before | Recognising something is wrong (*the changes*) * |
| My mother-in-law follows the traditional practices strictly. I was stressed. That's why I was stressed. When my baby had jaundice, she showered him with various types of leaves. I'm not that kind of person. I live in the city for quite sometimes, so I can't follow her way. | Mother in law and postnatal traditional practices | Having conflict to follow traditional practices | Tradition-modernity conflict |
| I did *dhikr* [reciting Arabic verse to remember God] and it helped me to relax. That's all I did. | Remember God | Religious practices | Ways of reducing distress |

\* Initial categories became themes

*Deciding initial themes*

After the initial categories were developed based on the selected transcripts, the initial themes were decided and links between themes were identified, grouped and sorted to produce a level of main themes and subthemes. This was not a straightforward process. Instead, it involved logical and intuitive thinking, making judgements about meaning and examining connections between arising concepts and issues to ensure the research questions were fully addressed (17).

The construction of the initial themes was based on the priority issues as informed by the research objectives, emergent issues raised by the participants, and recurrent points on particular experiences patterned by the participants' transcripts. This was to avoid any concepts derived from previous studies and existing theory that may 'contaminate' the meaning of the data as expressed by the participants. At this stage, most of the themes were substantive in nature (such as emotions, behaviours, descriptive explanations). Some of the initial categories became initial themes (as indicated in the coding matrix above).

The labelled transcripts were revisited to allow for consistency in labelling. All revisions were recorded as a referral for the later stage of analysis. The process of familiarisation continued until all selected transcripts were reviewed and understood. To avoid any overlapping between the themes, a thematic framework was developed consisting of initial themes and initial categories as illustrated in the thematic framework (Table 2).

**Table 2: Thematic framework with initial themes and initial categories**

| Initial themes | Initial categories |
|---|---|
| Recognising something is wrong (*the changes*) | • Easily becomes irritated/ angry<br>• Crying<br>• Rough towards baby<br>• Loss of excitement<br>• Sensitive<br>• Physical discomfort: Migraine/ headache<br>• Loss of appetite<br>• Suicidal ideation<br>• Neglecting the baby |
| Causal explanations | • Physical factors: Constipation, wound break down, perineal wound, limited movement<br>• Baby's health problems<br>• Tiredness<br>• Infections during pregnancy<br>• Traditional practices<br>• Family health problems<br>• Lack of support<br>• Baby's attitude<br>• Job-related stress<br>• Limited time with children<br>• Financial constraints<br>• Marital problems<br>• Sociocultural problems |
| Ways of reducing distress | • Express feelings to others<br>• Religious practices<br>• Sleeping<br>• Self-persuasion<br>• Diversional activities/ positive thinking |
| Perceptions towards healthcare practitioners (HCPs) | • Giving health advice like mothers know everything<br>• Verbal advice, no practical support<br>• Lack of spiritual support<br>• Lack of understanding |
| Potential interventions | • Seminar for expecting mothers<br>• Health education on emotional changes during postnatal period<br>• Postnatal life/ motherhood/ baby's care |

*Summarising or synthesising the data*

At this stage, the thematic framework was applied to all transcripts. This final process of data management aims to 'reducing the data' and tracking evidence to aid in reporting findings. Each transcript was examined thoroughly for two main reasons. The first reason was to match the

thematic framework with the transcripts and vice versa. The second reason is to identify emerging concepts without excluding words or sentences immediately just because they did not fit the framework. These processes were conducted by maintaining participant's own language and giving a minimum interpretation for each word/sentence.

Descriptive accounts

In the descriptive accounts stage, elements and dimension were defined and themes were refined involving three key steps, which are detection, categorisation and classification (9). In the detection step, not only the substantive concepts were identified, but the thematic framework was also investigated to identify any linkage and similarity between one category to another, thus, it manages to differentiate two related themes. For instance, feelings that aroused during the occurrence of postnatal depression (symptoms of postnatal depression) and the changes that occurred as a result of postnatal depression (perceived impacts of postnatal depression) were separated.

Whilst categorisation involved refining categories by assigning descriptive data, classification introduced a higher level of abstraction (9). This process was conducted with three main thoughts namely (i) remain close to data, (ii) level of detail captured, and (iii) categorisation is comprehensive. Some initial themes were retained, whereas others were grouped into a more abstract level as analysis progressed. New language/terms were used to represent the original meaning of the participants' descriptions while maintaining their overall meaning.

*Explanatory accounts*

Explanatory accounts involved the process of detecting patterns, associative analyses and identification clustering. These provide a deeper understanding of the reviewed subjects. To do this, the whole dataset was inspected to confirm any repeated patterns. The reasons for the differences between groups were also explored.

The first step in explanatory accounts was checking exactly how the level of matching between the phenomena was distributed across the whole set of data. For instance, examining how many participants stated that cultural factors were related to the development of postnatal depression and within which cultural background it was highlighted.

The second step was interrogating the patterns of association, which involved searching not only the data that matched with the patterns but also included deviant cases. This process continued until the whole dataset was examined.

Explanations of any differences and associations across the data set were developed through 'reading the synthesised transcripts, examining patterns, sometimes re-reading full transcripts and most of the time thinking around data' (9).

As a result of the above process, four themes were identified for the women with postnatal depression and three themes were identified for the HCPs. For the women's group, the themes were *the changes*, *causal explanations*, *dealing with postnatal depression*, and *perceived impacts*. For HCPs' group, the themes were *conceptualisation of postnatal depression*, *causal explanations*, and *care and treatment*. Table 3 displays the sample of development of the core concept, labelling and final themes for women with postnatal depression.

**Table 3: Development of the final themes within women's dataset**

| Initial themes | Initial categories | Refined categories | Core concepts | Final themes |
|---|---|---|---|---|
| Recognising something is wrong | • Loss of excitement<br>• Getting easily irritated<br>• Being not normal<br>• Sensitive<br><br>• Suicidal ideation | Different character<br><br><br><br>Bad thoughts | Emotional changes | The changes |
|  | • Crying<br><br><br><br>• Rough towards baby<br>• Neglecting the baby | Uncontrollable crying<br><br><br>Temperamental actions | Behavioural changes |  |
|  | • Difficulty falling asleep at night<br>• Physical discomfort: Migraine/ headache, loss of appetite | Sleep deprivation<br>Loss of appetite and physical discomfort | Physiological changes |  |
| Causal explanations | • Afraid the baby would die in her womb<br>• Worries about the effects of antibiotics to the baby in her womb<br>• Anxiety due to vaginal infections<br>• Doctor said maybe the baby is abnormal.<br><br><br>• Not ready to have baby | Anxiety during pregnancy<br><br><br><br><br>Unplanned pregnancy | Pregnancy-related stressors | Causal explanations |
|  | • Physical factors: Constipation, wound breakdown, perineal wound<br>• Tiredness<br><br>• Baby's attitude<br>• Limited time with children | Physical stressors<br><br><br>Family management | Transition to motherhood |  |

| | | | | |
|---|---|---|---|---|
| | • Lack of knowledge - on childcare/ breastfeeding<br><br>• Unable to work after last childbirth<br>• Pregnancy is not as what as expected<br>• Less time for herself and husband/partner<br>• Less active<br>• Depending on others | Roles and identity | | |
| | • Lack of support<br>• Financial constraints<br>• Marital problems<br>• Baby's health problems<br>• Family health problems<br><br>• Traditional postnatal practices<br>• Breastfeeding problems and conflicts<br>• Conflicts in caring for the newborn | Social circumstances<br><br><br>Tradition-modernity conflict | Sociocultural factors | |
| Ways of reducing distress | • Diversional activities- cooking, playing with children, go for a walk, listening to music, reading<br><br>• Try to follow the traditional practices as possible.<br>• Set routine<br><br>• Religious practices<br>• Sleep and rest<br>• Received support from others | Diversional methods<br><br>Positive actions<br><br><br>Relaxing measures | Coping strategies | Dealing with postnatal depression |

| | | | | |
|---|---|---|---|---|
| Perceptions towards HCPs | • Roles of HCPs in the clinic- not in psychological health<br>• Verbal advice, no practical support<br>• Lack of spiritual support<br>• Sufficient care<br>• Viewed as a personal problem<br><br>• Unsatisfying advice<br>• Loss of confidence on the HCPs<br>• Less priority given to maternal emotional health | Perceived roles of the HCPs<br><br><br>Past experiences | Barriers in seeking help | |
| Potential interventions | • Counselling<br>• Follow ups via phone calls<br>• Support group<br><br>• Education and thorough assessment | Professional support<br><br>Education | Desired care | |
| Perceived impacts | • Harsh response towards the child's behaviour<br>• Shouting at the newborn baby<br>• 'Two different people' | Parenting styles | - | Perceived impacts |

**Discussion**

Using framework analysis to analyse transcripts from women with experience of postnatal depression, it was found that the symptoms of postnatal depression can be identified through three main changes which are: emotional, behavioural and physiological changes. The majority of women explained that they noticed something was wrong when they had emotional changes (e.g., 'loss of excitement', 'getting easily irritated', and 'being not normal') following childbirth. The main cause for the postnatal depression as perceived by the women was sociocultural factors, particularly a lack of support from families and cultural practices. It appeared that the perceived causes mentioned by the women would also apply to other pregnant and postnatal women. Perhaps what made the women link this with their experience of postnatal depression is when there was more than one factor that came to interact within a specific context, which had increased their distress. Despite their ability to recognise the symptoms of their emotional distress, and to link this with the difficulties they had during pregnancy and after childbirth, the majority of women did not perceive the alleviation of emotional distress as falling within the 'duty' of the healthcare practitioners (HCPs). Some of them regarded this emotional distress as their personal issues, which were not included in the HCPs' job descriptions. There were some women who still believed that HCPs should care for their emotional health and wanted to seek help, but they felt that they were not given appropriate attention by the HCPs. Without professional support women relied on self-help methods, such as sharing their distress with female relatives and friends. Women expressed the need for professional support by mentioning counselling, telephone-based interventions, support groups, extended health education and detailed assessments of maternal health by HCPs. It should be noted that the impacts of postnatal depression were not widely spoken about by the women in this study. Nevertheless, a few women mentioned that they were aware of their negative parenting styles and associated this with their emotional distress.

This reflective article provides a guide on how to analyse qualitative data using three interrelated stages of framework analysis as proposed by Ritchie & Lewis (9). Previous studies used different approaches. Gale et al. (15) suggested seven stages in conducting framework analysis which are transcription, familiarisation with the interview, coding, developing a working analytical framework, applying the analytical framework, charting data into the framework matrix, and interpreting the data), whereas Ward et al. (10) and Parkinson et al. (13) applied five stages of the analysis (familiarization, developing/identifying a theoretical framework, indexing, summarizing data in an analytical framework, and mapping and interpretation). While the numbers of the stages can be slightly different from one another, it should be noted that the process of framework analysis remains the same. This article combines both approaches through three stages, which are data management (familiarisation with raw data, deciding initial themes and summarising or synthesising the data), descriptive accounts (detection, categorisation and classification), and explanatory accounts (detecting patterns, associative analyses and identification clustering). It is noted that this approach of framework analysis gives a strong emphasis on data management with the focus on identifying any differences and associations across the data set. By doing so, it does not only provide a systematic data management guidance, particularly for novice qualitative researchers but also provides an "audit trail", addressing the issue of lack of transparency in qualitative data analysis.

**Conclusion**

This reflective article has demonstrated a worked example of how to apply framework analysis within qualitative data analysis based on a study of exploring women's experience of postnatal depression. It is argued that framework analysis is relevant in analysing textual data as it enables the researcher to compare and contrast the themes across many cases but remain connected to the participant's account (15). In addition, using framework analysis enhance systematic data management and analysis as it allows an in-depth exploration of data while providing an effective

and transparent audit trail. This means, when selected and implemented appropriately, framework analysis will produce credible findings. Healthcare researchers, both novice and experts may find example addressed in this article as useful when conducting and analysing qualitative studies.

While illustrating the advantages of using framework analysis, it must be noted that there are some limitations of using this type of analysis. First, adapting framework analysis is time-consuming, therefore, requiring commitments from the researchers and the team. Second, an open, critical and reflexive approach from all team members is essential for rigorous qualitative analysis. Third, although it has been argued that framework analysis suitable novice qualitative researchers, the presence of experienced qualitative researchers in the team to lead and facilitate all aspects of the analysis would be beneficial. Fourth, pertaining to the main findings within this study, it could not necessarily be generalised to other populations. The perceived causes for postnatal depression as explained by the participants in this study do not allow any causal-effect relationships. However, this study enriched the understanding of women's experiences of postnatal depression within a multicultural community and adds to the simultaneous use of multiple risk factors for postnatal depression. At least, the findings would be applicable to other populations with similar cultural backgrounds.

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**Conflict of Interest**

The authors declare that there is no conflict of interest regarding the publication of this article.

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