



MUMMIBODIES.
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Mummibodies

Eating disorders, pregnancy and postpartum period

A qualitative Study of Women With eating Disorders in Pregnancy and Post-Partum Period

Background

The purpose of this study is to gain better knowledge about how pregnancy and postpartum are experienced by women with eating disorders. There are well-known risks in people with eating disorders both during and after pregnancy (1, 2) and an increased risk of relapse (2). The strength of the study is the inclusion of users' own experience. It is necessary that health professionals understand the experiences of pregnant and new mothers with an eating disorder. This knowledge will form the basis for later development of adapted help and follow-up. The study will identify the course and experiences when women with eating disorders encounter pregnancy and childbirth. We will study three areas: 1) pregnant women and mothers' subjective experiences of the course and change in relation to food, body and weight during pregnancy and postpartum; 2) women's subjective experiences of emotional, cognitive and relational core experiences during and after pregnancy; and 3) women's own perceptions of what is the best help through pregnancy and childbirth.

Pregnancy and childbirth represent a major challenge for women with eating disorders. The body's shape, scope and functions change. Strange appetites can occur. The woman is often presented with a number of advices on diet and exercise. Eventually, breastfeeding will begin where the baby sucks nutrients out of the woman's own body. The woman's experience of her own body and the way she handles these changes can affect her care and be a risk factor for the newborn's development both physically and mentally. Studies show that low weight and poor nutrition during pregnancy can lead to premature birth (3-5), low birth weight (3-7) or cardiovascular malformations in the baby (4-7). Other studies show that mothers with eating disorders have difficulty breastfeeding and challenges related to the transition to solid foods (5,8,9,10,11). Several studies describe that postpartum depression occurs more frequently in women who have or have had an eating disorder (1, 5, 11, 12).

The risk of getting worse appears to be high after birth (1, 2, 12-15). Eight to ten months after birth, a Swedish study found an eating disorder in 11 percent of mothers (13). Another Swedish study found 5.2 percent in 10-12. week in pregnancy, which then increased to 12.8 percent 8-10 months after birth (15). The incidence of eating disorders among pregnant women is significantly higher than previously thought and increases throughout childbirth.

We know too little about how women with eating disorders relate to their body and food during and after pregnancy. What is the woman's relationship with the body in the "fourth trimester"? It has been documented those women with a previous eating disorder experience great difficulty with the physical changes during both pregnancy and childbirth (1, 2). Body dissatisfaction plays a crucial role in both the development and maintenance of eating disorders (16). Results from existing research are somewhat varied, but give a strong indication that pregnancy is associated with increased body dissatisfaction and recurrence of symptoms in those who have previously had an eating disorder (2, 14, 17, 18). Probably the eating problems take several paths through pregnancy and childbirth. Clinical experience and some studies suggest that in some cases, eating problems will decrease during pregnancy (15). For many, these positive changes seem to be temporary. Scientifically, we know far too little about these processes and whether the positive change with better help could have been lasting.

There is a great need for research that promotes expertise on how to understand and help women with eating disorders during pregnancy and in childbirth. Vestre Aker Health station contacted the Department of Eating Disorders because they experience increased concern and dangerous practices related to body image and self-image in pregnant and new mothers. Nurses and midwives believe they lack expertise in the field. They say they do not address this. They are afraid of making mistakes and hurt worse (personal communication, Leader at Vestre Aker health station).

Measures that ensure high motivation and good follow-up should preferably be based on the woman's own motivated motivation (19-22), be individually adapted (19, 23) and preferably harmonize with - at least not come into conflict with - what the woman herself thinks will be the best help for himself and the child. This presupposes in-depth knowledge of how the eating problems through pregnancy and childbirth look from the woman's point of view. We need to know how she perceives the process. We need to know how she experiences and reacts to the changes in her body, appetite and weight. And we need to know what the woman herself thinks would have helped her and the baby best through these periods. Today we lack scientific knowledge on all these topics. Both clinicians and researchers therefore recommend that health authorities pay greater attention to the importance of eating problems during pregnancy and childbirth (24).

Aim

To promote understanding of how pregnancy and childbirth are experienced by women with eating disorders in order to prevent relapse and develop measures for this vulnerable group.

Research questions

We have formulated three key research questions.

1. Can characteristic processes be identified in relation to their own body, food and weight when women with eating disorders encounter pregnancy and childbirth? Here we will try to identify and describe different prototypical processes, any common features, characteristic separators and drivers.
Delivery: Empirically based hypothetical model for prototypical processes.
2. Can it be identified that clinically or preventively important cognitive, emotional, behavioral and relational core experiences that the woman herself believes have been central in determining the course? believes has been critical of the course of the eating problems during pregnancy and during childbirth.
Delivery: Categorization, characterization, identification of possible dimensions and experiential descriptions of assumed critical, typical and atypical experiences.
3. Can measures be identified that the woman herself believes have or would have led to her eating disorder having a less negative, possibly more positive, development during pregnancy and childbirth? Here we will describe what the women themselves as reflected as possible believe have helped and would have helped them.
Delivery: Linked to the various identified processes and critical experiences, a list of potential measures that women themselves believe will contribute to better development for women, infants and immediate family.

Method

Design

The epistemological approach is empirical realism (not constructivist) where we assume that experiences are real and that the woman is an expert on her own experience. The strategy is to utilize the woman's experience as a source of knowledge. The point of view is the woman's, where we try to formulate, categorize, characterize and analyze dimensions in eating problems in the face of pregnancy and childbirth as the woman sees it.

There are three reasons for this choice: (1) The woman's experience is an underused source of knowledge in this area. (2) Therapeutic and indicated preventive measures are dependent on an alliance with the woman. Alliance formation is normally based on the woman's experience. (3) The woman's subjective presentation of the course may deviate from what an external observer would have reported. The measures the women themselves launch may run counter to what research and experienced clinicians recommend. But objective measures that neglect the user's own experience are unlikely to have a particularly lasting effect.

This longitudinal, prospective qualitative study involves a sample of 24 women with a history of severe EDs, assessed during pregnancy and six months postpartum. The Eating Disorder Examination Questionnaire (EDE-Q) and the Eating Disorder Examination (EDE) were employed to evaluate current diagnoses at both time points. Ideal types, Grounded Theory, and Interpretative Phenomenological Analysis were utilised to refine user experiences and develop perceived models based on these experiences. The study protocol received approval from the Norwegian Regional Ethics Committee (REK) (project ID 92655/2020).

Data analysis

To achieve the project aims, a prospective, longitudinal, in-depth design was employed across all three sub-studies. Twenty-four women with a history of severe EDs were interviewed twice: the first interview occurred during pregnancy (between weeks 9 and 40), and the second approximately four to six months postpartum. Semi-structured interviews explored the participants' perspectives, perceptions, and meanings attributed to their experiences related to food and body image. Supplementary data, including standardised diagnostic interviews (e.g. the EDE and EDE-Q), were gathered at both time points to establish diagnostic accuracy using DSM-5 criteria.

A semi-structured, participant-centred 'experience interview' was employed to gather data for all three sub-studies. A total of 24 women were interviewed at two time points, resulting in 48 interviews. Each participant engaged in two meetings, during which they received introductory information, participated in a semi-structured interview, and completed the EDE-Q (Fairburn & Beglin, 2008) and the EDE interview (Fairburn et al., 2008). The total duration for these sessions ranged from four to five hours, culminating in 206 hours of recorded material across all interviews.

Given the distinct nature of the questions posed in the three sub-studies, three different data analysis methods were employed (Masoodi, 2017). These methods facilitate the identification of patterns within and across participants' experiences and perspectives to address the research project's aims. Significant differences exist between Ideal Type (IT) analysis, Interpretative Phenomenological Analysis (IPA), and Grounded Theory (GT) in terms of selection, analysis, and reporting methods (e.g. constructed ITs and trajectories versus actual

experiences). These differences proved beneficial given the varied research focus of the studies.

Study 1: Bodies out of control: Relapse and worsening of eating disorders in pregnancy. Methods: Semi-structured interview/standardised interviews for diagnostic evaluation for DSM-5 diagnosis. Participant selection: 23 of 24 pregnant women with a history of Eds. 23. Interviews. Analysis: Ideal type (IT) analysis.

Study 2: IVF-induced pregnancy and early motherhood among women with a history of severe eating disorders. Methods: Semi-structured interview/standardised interviews for diagnostic evaluation for DSM-5 diagnosis. Participant selection: Seven of the 24 women with a history of Eds and IVF backgrounds interviews from pregnancy to postpartum. 14 interviews.

Study 3: Trajectories of severe eating disorders through pregnancy and early motherhood. Methods: Semi-structured interview/standardised interviews for diagnostic evaluation for DSM-5 diagnosis. Participant selection: All 24 women with a history of Eds. Interviews from pregnancy to postpartum. 48 interviews. Analysis: Elements of Strauss' grounded theory (GT) analysis.

Study I: Ideal type analysis

IT analysis provides a structured approach for examining and comparing various aspects of experiences by simplifying them into distinct categories and concepts (Stapley et al., 2021). For this analysis, data from all participants at time point 1 (pregnancy) were utilised. Of the 24 participants, 23 reported either a worsening of or a relapse in EDs during pregnancy. Consequently, the experiences related to this worsening and/or relapse were further explored among these 23 participants.

The research questions for Study I (Sommerfeldt et al., 2022) were: 1. How do women with a history of EDs experience pregnancy? 2. How do they understand and describe the worsening, relapse, and perceived triggers of these changes?

IT analysis (Weber, 1978) was selected to address these questions, as it allows for the identification of patterns among a group of women exhibiting considerable variation. This choice was informed by the limited empirical knowledge concerning how women with a history of EDs experience pregnancy and ED pathology. A heterogeneous sample was employed, not solely based on diagnoses but also considering background factors such as length of illness, whether participants were first-time mothers or had previous pregnancies, and experiences related to abortion, IVF, and trauma. IT analysis was thus used to encapsulate the most relevant experiences through ITs.

Study I sought to uncover similarities and differences within and across the dataset regarding the participants' views and experiences (Ayres et al., 2003). Through IT analysis, the women's accounts were described within their contexts, while also highlighting the variations and patterns that may exist across their experiences (Ayres et al., 2003). Thus, IT analysis was employed to compare each participant's experiences of worsening or relapse, serving as a tool for interpretation and understanding of these occurrences, and for generating new insights regarding pregnancy in the context of EDs.

Key features of IT analysis include in-depth descriptions of participant groups, comparisons among groups and individuals through material deconstruction, hypothesis formation regarding thoughts and behaviours, and subsequent reconstruction of the material into qualitative cluster analyses.

Steps of the analysis in study 1

Five steps were inspired by IT analysis (Stapley et al., 2021):

1. Following the bottom-up principle (Richard, 2015; Seidel & Kelle, 1995), all text from time point one was transcribed and re-read. This process involved examining each line of the transcripts to capture meaning, compare data for similarities and differences, and list elements pertinent to the research questions. Active coding facilitated engagement with the data, encouraging questions, interpretations, and comparisons of experiences. Detailed notes from the interview experiences, including reflections on the significance of participants' accounts, were summarised. Of the 24 participants, 23 identified bodily changes as a challenge, noting significant deterioration or the re-emergence of EDs. Consequently, further analysis focused solely on experiences and perspectives related to the worsening or relapse of eating pathology.
2. Each of the 23 participants' experiences of worsening or relapse was summarised. These summaries were deconstructed to identify key issues in their experiences and perspectives regarding ED worsening or relapse, incorporating the researcher's viewpoints. Themes related to relapse and the exacerbation of EDs emerged. Experiences concerning bodily changes during pregnancy became crucial elements for the ITs. Participants identified perceived triggers, with significant categories emerging that influenced experiences during pregnancy (e.g. *in vivo mothers*, *first pregnancy compared with subsequent pregnancies*, *abortions*, and *pregnancy as a high-risk period for relapse*).
3. Third, a reconstruction of the material via clusters of similar experiences was formed using summaries to combine the experiences of several women to construct ITs. Each summary was compared with others to discern differences and similarities, with the aim of identifying patterns across the dataset. ITs were conceptualised based on essential features that emerged from initial coding, such as *perfectionism* ('*I have never been satisfied with something halfway, and I want to be the perfect mother*'), *rigidity* ('*I have always been a person who has plans and rules for everything*'), *guilt* ('*I know I should be doing all this while pregnant; I am hurting the baby inside me*'), *shame* ('*I am a terrible person doing all this while pregnant*'), *impulsivity* ('*I have always been described as impatient and someone who makes decisions without thinking*'), *anxiousness* ('*I have always been described as a very worried type through my childhood*'), and *insecurity* ('*I have always been concerned about what others think of me*'). Following a thorough analysis, 11 clusters informed the development of tentative ITs: '*the chaotic mother*', '*the outer directed mother*', '*the rigid mother*', '*the furious mother*', '*the shameful mother*', '*the guilty in vitro mother*', '*the competitive mother*', '*the self-lost mother*', '*the ambivalent mother*', '*an aliened body*', and '*a liquid body*'. See Table 2 for the clusters of experiences and associated quotes.
4. The simplest solutions were sought to ensure an optimal qualitative balance between managing variations, maintaining conceptual clarity, and minimising overlaps. The clusters were re-named and included overlapping experiences: '*the outer directed mother*' type was included in the re-named cluster '*the perfect mother-to-be*' type; '*the rigid mother*' and a '*liquid body*' types were included in the re-named cluster '*the worried mother*' type; '*the furious mother*' type was included in the '*shameful mother*' type; '*the guilty in vitro mother*' type was included in the re-named cluster '*the worried mother*' type; and '*the rigid mother*', '*the outer directed mother*', and '*the competitive mother*' types were included in '*the perfect mother-to-be*' type. Some clusters were re-named to better reflect their characteristics (e.g. '*the ambivalent mother*' was re-named '*the mother who fears motherhood*'). This reorganisation yielded seven ITs: *the chaotic mother*, *the rigid mother*, *the perfect mother-to-be*, *the worried mother*, *the shameful mother*, and *the mother who fears motherhood*. These types were labelled according to the most relevant personal features characterising worsening conditions or a relapse. For example, '*an*

alienated body' and *'the furious mother'* were more related to experiences than IT characteristics and, thus, were discussed and reorganised into *'the shameful mother'*.

5. Descriptions of the ITs were constructed using the summaries that best represented each theme. Each summary was refined to remove experiences not aligned with the relevant cluster and to replace them with appropriate experiences. Ongoing discussions ensured that the ITs accurately represented the data. Ultimately, this process yielded coherent ITs.

Study II: Interpretative phenomenological analysis

IPA investigates how individuals derive meaning from their life experiences. In this study, seven out of 24 participants underwent IVF. This group of women was selected due to their clear similarities. Data analysis for these participants encompassed two time points: pregnancy and postpartum.

The research question for Study II (Sommerfeldt et al., 2023) was: How do women with a history of EDs who have undergone IVF experience the process of becoming mothers through IVF, pregnancy, and the postpartum period? IPA (Smith et al., 2022) was employed to address this question and to explore the experiences of this homogeneous group of IVF mothers with a history of EDs. This approach allows for a more nuanced understanding of IVF experiences, particularly focusing on differences among participants who share a significant common denominator rather than among those who are already markedly different.

A targeted selection strategy was employed concerning IVF, including participants who had experienced the phenomenon under study (Creswell & Poth, 2018; Patton, 2015; Smith et al., 2022; van Manen, 2014). IPA is especially pertinent for smaller, homogeneous data sets (Smith, 2015; Smith et al., 2022). It captures and conveys key individual experiences that are vital for both clinicians and participants in understanding a given phenomenon. Consequently, IPA does not construct meanings but rather elucidates the individual phenomena and experiences relevant to each context, facilitating clinicians' comprehension of the described experiences. Ideography is concerned with deriving meaning from participants' unique experiences (Smith, 2015; Smith et al., 2022). The analysis and systematisation of participants' experiences related to pregnancy and childbirth were thus comprehended phenomenologically, allowing for in-depth descriptions of IVF experiences in the context of pregnancy and postpartum.

The application of IPA in this study was grounded in hermeneutics (Smith et al., 2022). Hermeneutics emphasises the interpretation of people's experiences through in-depth exploration (Thagaard, 2018). The interpretation of meaning, along with the concepts of *conversation* and *text*, is central to this approach (Kvale, 1996). The interpretive process is characterised by the 'hermeneutical circle' (Giddens, 1987; Kvale, 1996), where understanding a text develops through a cycle wherein the meaning of its parts emerges from a grasp of the overall meaning. A critical methodological step involves generating an overarching understanding before moving from the general to the specific. This interpretive process consistently oscillates between the whole (e.g. the interview) and the parts (e.g. a quote). While participants' experiences remain distinct from those of the researcher, a conducive interview environment can facilitate partial insight into the participants' lives (Smith et al., 2022). Thus, a circular process emerges, in which participants' experiences contribute to the researcher's evolving understanding of the phenomena under investigation (Stiles, 1999). This interaction creates a two-stage interpretation process in which participants simultaneously attempt to understand their world while the researcher endeavours to comprehend what the participants seek to understand about their environment (Kvale, 1996; see Section 6.2.3 Reflexivity).

Key features of IPA include in-depth descriptions of a homogeneous group to elucidate the participants' lived experiences and the implications of these experiences within

their context (Smith & Osborn, 2007). The hermeneutical circle plays a pivotal role in this analysis, assisting in the interpretation of participants' experiences.

Steps of the analysis in study II

IPA was conducted in six steps, following Dallos and Vetere (2005) and Smith et al. (2022):

1. All 14 transcripts from both time points were read and re-read to capture the overall meaning of the content. Detailed notes from the interviews provided insights into the participants' expressions, revealing similarities and potential differences among the seven IVF mothers. This information was organised into a table for clarity (see Table 3 for descriptions of IVF mothers). The interview notes and transcripts facilitated an understanding of how the women articulated their experiences. These notes also encompassed thoughts and reflections, aiding in recognising preconceptions and their possible impact on the thematising process. For instance, one note remarked, *'She sounds worried and anxious when talking about the baby inside her. I am wondering if I asked her a too direct question and if that made her feel ashamed'*.
2. The descriptions of the participants' experiences with IVF were examined. Summaries were crafted from the experiences of all seven participants, spanning pregnancy to postpartum. The semantic content—the language and words used by participants—was thoroughly analysed (Smith et al., 2022). The focus was on how participants articulated, understood, and conceptualised their IVF journeys. For example, one participant stated, *'The woman expresses that shame and guilt, and consequences of ED pathology, are crucial throughout the process and result in denial and prevent her from telling healthcare professionals about it'*. Detailed notes and comments on the transcripts and summaries facilitated the identification of meaningful units. Some reflections were interrogative, such as, *'I wonder about the woman's relation to her body and how she reacts to IVF might be in connection with her earlier trauma experiences?'* This depth contributed to the analytic process. Certain interview segments elicited more detailed comments, particularly those closely tied to the participants' expressed meanings, such as, *'ED pathology was hidden throughout the whole process'*. Other segments prompted more interpretative insights (hermeneutics), for instance, *'She did not tell anyone because of shame and guilt. Is she afraid of being a terrible mother?'* These notes were instrumental in understanding the participants' experiences and identifying patterns in their expressed meanings (Smith et al., 2022). In this step, potential quotes from the transcripts that reflected participants' experiences relevant to the research aim were identified. One poignant example included, *'I'm an adult, and I'm ashamed that I still struggle with it. Everyone thinks I have recovered and am just happy to exercise. If I maintain my weight, people think I'm not struggling with this. After all, I managed to get pregnant'*. This stage also included reflections from the researcher, such as, *'I get a feeling of a switch in themes when talking about the body, or concreteness of symptoms such as amount of food, bingeing, purging. I recognise that I have become more careful and hesitate to ask follow-up questions'*. According to Smith et al. (2022), this interaction can be conceptualised as a Gadamerian dialogue between the researcher's preconceptions and an evolving understanding of the participant's life. The researcher's experiences during the interviews were used to deepen the understanding of participants, particularly regarding feelings of shame. Continuous discussions of comments and reflections with the research team and reference group enhanced awareness of potential preconceptions, clarifying both negative and positive experiences of the IVF process.
3. Overall meaningful themes were identified. Based on the summaries, this step was implemented earlier than Smith et al. (2022) recommend, as each participant's experience was explored in-depth prior to examining common themes. The transcripts, notes, and

summaries facilitated an exploration of subtle distinctions, variations, and dimensions within the participants' experiences. Steps 1 to 3 were conducted for one participant at a time.

4. Participant-based comments grounded in phenomenological, hermeneutic, and semantic insights from Steps 2 and 3 were developed. This process entailed refining the summaries from Step 2 to concentrate on key details while reducing the number of comments. Unmodified quotes encapsulating IVF experiences were included, such as: *'The body changes faster due to the hormone treatment. This time I got a belly and got very fat very early on. I didn't want to tell anyone, for fear of failure. I thought I would go two months without anyone seeing it, without feeling big. But this time I got a belly just weeks after I got pregnant'*. The roles of the 'I' (interpretation) and 'P' (phenomenology) were central to further analysis. Comments from Step 2 were interpreted with less analytic depth, focusing on descriptive rather than interpretative insights, while retaining the essence of participants' experiences. These insights were subsequently coded for further analysis. Ideas from previous transcriptions, categorisation, and thematisation were discussed with the research team and reference group to prevent the replication of themes from one participant to another.
5. Patterns and themes were identified concerning how a specific phenomenon, such as IVF, was experienced by a group of women with a history of EDs in the contexts of pregnancy and postpartum (Smith et al., 2022). The categorisation process was completed analogously, with codes selected for further analysis marked and summarised for all seven participants, organised into themes related to managing uncertainties from both time points (see Table 4 for examples of themes with quotes). This summary provided an overview of the varied experiences of all participants. The summaries from different time points enriched, illuminated, and intersected with one another, revealing several similarities in the described experiences.
6. Four phenomena were identified: *'anxiousness and fear'*, *'shame and guilt'*, *'sexual maladjustment'*, and *'non-disclosure of eating problems'* (see Section 5.3). These phenomena were named based on the content of the participants' experiences. The emerging themes were organised according to three phases: 'IVF', 'Pregnancy', and 'Motherhood'.

Study III: Grounded theory

GT emphasises the development of theory through systematic analysis of qualitative data (Charmaz, 2014; Corbin & Strauss, 2008; Glaser & Strauss, 1967). It identifies common themes regarding change across individuals and captures how participants' experiences evolve over time. A key feature of GT is its interpretative and systematic approach to data analysis (McCann & Polacsek, 2018; Strauss & Corbin, 1998). All 24 participants from both time points were included in this analysis.

The research questions for Study III (Sommerfeldt et al., 2024) were: 1. How do women with a history of severe EDs experience their eating pathology during the process from pregnancy to postpartum? 2. Is it possible to identify different trajectories through pregnancy and early motherhood based on these experiences?

To address these questions, elements of GT, as inspired by Strauss (Corbin & Strauss, 2008), were employed to construct a model depicting the trajectories of ED pathology among all participants from pregnancy to postpartum. The aim was to uncover processes and structures related to experiences of ED pathology during these periods. Coherence and internal consistency patterns were sought, alongside consideration of differences in experiences across multiple cases. GT is an inductive methodology that seeks to bridge the gap between research and theory (Glaser & Strauss, 1967). Selected elements of GT provide a

theoretical framework for understanding a complex phenomenon, with emphasis placed on individual perspectives that yield valuable data for developing a theoretical sample (Strauss & Corbin, 1998).

This approach generated a theory grounded in the experiences and perspectives of the women (Corbin & Strauss, 2008). GT offers a conceptual framework that can inform tailored support and guide further quantitative research, such as the trajectories of EDs from pregnancy to postpartum. It aimed to identify themes across participants and segment them into distinct units of meaning. Informed by Strauss, GT underscores the importance of reflexivity, or the researcher's awareness of their prejudices, assumptions, and values (Glaser & Strauss, 1967).

Steps of the analysis in study III

Elements of the GT analysis in this study were conducted in nine steps, following Corbin and Strauss (2008):

1. Research questions were formulated through the transcription and repeated review of all interviews, alongside discussions with the research team and reference group. Each transcript was examined line by line, and open codes were assigned to identify themes based on the 'bottom-up principle' (Richards, 2015; Seidel & Kelle, 1995) across the 48 interviews. For instance, codes related to the experience of ED pathology during pregnancy and postpartum were generated through open coding, including terms such as 'worsening': *'I cannot stop this bingeing, I am vomiting everyday again'*, 'relapse': *'I did not think that I was going to be this restrictive again, all the rules around food are getting worse'*, 'improvement': *'Finally, I have found another meaning and focus. I really embrace this time'*, or 'put on pause': *'I am making plans for the time after childbirth. I am holding on now, knowing that I can do whatever I need to do after childbirth'*. Notes and summaries highlighted central themes and categories throughout the analysis process, such as: *'23.06.22. She describes how she failed in her plans during pregnancy. She gives examples of feelings of insecurity. During the interview, she asked for confirmation several times if she was doing things right'*. By listening to interview recordings and reviewing transcripts, possible interpretations were discussed with the research team and reference group. This process generated numerous concepts around the experiences of ED pathology, which were then categorised based on commonalities.
2. Data were systematically and iteratively analysed using axial coding to identify key themes and concepts (Sbaraini et al., 2011). The complexity of each case was deliberated upon before achieving consensus on central themes and categories that encapsulated the participants' narratives rather than isolated factors (Corbin & Strauss, 2008). Corresponding to the main research questions in this study, all text excerpts addressing experiences and challenges related to ED pathology from pregnancy to postpartum were coded, based on contextual analysis rather than solely on participants' words. Themes and categories of trajectories emerged by defining meanings and making analytic interpretations of specific statements. For example, the statements *'I am disgusting'*, *'I am fat'*, and *'I feel like an alien'* were interpreted as differing aspects of the trajectory labelled *'overwhelmed mother'*.
3. Summaries for each participant were created to integrate data from various sources across two time points. These summaries captured the progression from pregnancy to postpartum, detailing participants' experiences regarding their journeys in and out of ED pathology. They facilitated the development of nuanced descriptions within and across cases, offering in-depth insights into how participants' thoughts, feelings, and behaviours related to body image, weight, and food evolved. Through the selective coding process, trajectories detailing movements in and out of ED pathology emerged.

4. Constant comparison through the collection, transcription, analysis, and comparison of summaries facilitated the identification of patterns, themes, and categories (Charmaz, 2014; Corbin & Strauss, 2008). The examination of how women experienced ED pathology during pregnancy and postpartum, along with the interrelation of different themes, was addressed. The constant comparative method, initially proposed by Glaser and Strauss (1967) and later refined by Strauss (Corbin & Strauss, 2008), emphasises that the researcher should oscillate between the open coding (steps 1 and 2) and axial coding (step 3) processes multiple times before progressing to selective coding (steps 4 and 6) (Strauss & Corbin, 1998). This active coding process engaged the data, prompting questions, interpretations, and comparisons of experiences. The interplay between these steps facilitated the emergence of robust statements or concepts and verified the significance of a potentially crucial core trajectory (Corbin & Strauss, 2008). New data were continuously compared with previously collected information, including transcriptions and notes, to refine and adjust the emerging trajectories (Glaser & Strauss, 1967). This comparison process ensured that the modelled trajectories were grounded in the data and accurately represented the participants' experiences (Glaser & Strauss, 1967). Different categories emerged based on factors such as diagnosis, whether the mothers were undergoing IVF and distinctions between first-time and subsequent mothers.
5. The experiences related to different trajectories were validated against the original texts through confirmatory and selective coding (Corbin & Strauss, 2008). Three structural components were identified: precursors, triggers, and protective factors. Refer to Table 5 for details on these components and related quotations. Precursors were factors present before the women became pregnant, which they deemed salient in navigating pregnancy and early motherhood. Participants described various precursors (e.g. *personality characteristics, body-related precursors, precursors related to role-model affinities, familial transmission, attitudes towards pregnancy, the number of births, and earlier history of EDs*).
Triggers were specific events associated with participants' experiences of relapse or exacerbation of EDs. For instance, a participant stated, '*Issues about weight had not been bothering me for the last few years (precursor), but when I got pregnant so quickly, I lost control*' (trigger), '*I want to be the perfect mother*' (precursor), and '*When I got pregnant, nothing went as I planned it*' (trigger). External triggers were identified (e.g. *negative comments on body or weight and lack of support*). Others were events that originated from within the participants (e.g. *changes in apparency, the body being an alien, feelings of lack of success, intensified exercising*).
- Protective factors* encompassed experiences and events that women associated with positive coping strategies during pregnancy and early motherhood, as well as improvements in their eating pathology over time.
6. The interrelations between the higher-order constructs (*precursors, triggers, and protective factors*) were examined to capture the complexity of participants' narratives. Experiences were described longitudinally, spanning from before pregnancy through pregnancy, childbirth, and the postpartum period. These experiences were organised into five trajectory constructs, representing the minimum necessary constructs to describe women's perceptions of their ED trajectories into motherhood.
7. Constructs closely reflecting participants' descriptions of their experiences were developed within an atheoretical framework, utilising elements from GT. The trajectory constructs were labelled based on their content, leading to the identification of short descriptions: *the mastering mother*, in which an ED pathology seems to be absent through pregnancy and early motherhood; *the succeeding mother*, in which an ED worsens during pregnancy, but reduces during early motherhood; *the inadequate mother*, in which ED

pathology worsens before pregnancy, through pregnancy, and during early motherhood; *the depressed mother*, in which the ED subsides during pregnancy, but worsens during early motherhood; and *the overwhelmed mother*, in which the ED worsens during pregnancy and early motherhood. Based on variations within these constructs, three overarching constructs representing five types of trajectories were extracted, with participants potentially belonging to one or two different trajectories.

8. Condensed quotations from all interviews were utilised to illustrate the complexity of participants' experiences as grouped into a subjective trajectory. The three components (*precursors*, *triggers*, and *protective factors*) were addressed across all trajectories but exhibited significant variation among participants. These concepts were grounded in the data pertaining to the labels assigned to their experiences (e.g. *mastering*, *succeeding*, *inadequacy*, *depressed*, and *overwhelmed*). Through this process, the trajectories were tested and refined via further data collection and analysis (Glaser, 1978; Strauss & Corbin, 1998). Subsequently, these concepts were integrated into an empirical model elucidating the individual variation of ED pathology trajectories from pregnancy to postpartum concerning precursors, triggers, and protective factors.

Reference group: User representatives as co-researchers

In the pre-project phase, we will establish a reference group with relevant personal experience. In collaboration with the user organizations Counseling on Eating Disorders and the Eating Disorders Association, we have recruited a group of mothers who have had or have an eating disorder. The focus will be on experiences they themselves have had during and after pregnancy. The purpose is to get input to the interview guide and help to later validate the results. Research questions, analyzes and results will be discussed with the group during and finally during the project period.

Informants

We will use a heterogeneous sample. This has several causes. We currently know too little scientific to identify one scientifically and clinically interesting homogeneous group. Our clinical experience indicates that there can be great variation between different women in this life situation. In this round, we seek to identify different experiences one may have. Varied diagnoses have been chosen because we want to describe different courses, because these diagnoses are often unstable, and because we want to identify possible measures with different experiences and courses. Such diversity has great clinical relevance and has not been previously described scientifically. In practice, it facilitates the recruitment of informants. A disadvantage of using a heterogeneous sample is that each individual informant becomes relatively important. This is a small problem as long as the purpose is to identify different experiences. The limitation lies in the cases where a supposedly important experience is described in only one or very few informants and at the same time there is basically little depth and nuance in the descriptions. This is compensated to some extent by very high demands on the quality of the way we interview the informants. We know that some of those who have an eating disorder during childbirth may not have shown a symptomatic level during pregnancy. There can be many, and maybe even mean a different problem. Therefore, we have defined two groups of informants. We define one group of informants in pregnancy and follow longitudinally with two measurement times: in pregnancy and after birth. Another group of informants is defined after birth and interviewed about current and past experiences.

The number of informants for problem 1 will be determined on the basis of a saturation criterion where we include informants until after at least ten interviews, three subsequent interviews follow which do not add anything significantly new to the answer to the problems (30). Based on previous experience with similar surveys, the number of informants for each

issue is expected to be somewhere around 20 informants, ie about 40 informants. From these, a strategic choice will be made on issues 2 and 3. Strategic choice can mean looking for differences in order to obtain different prototype experiences. Recruitment of informants will take place continuously from the start of the project via a network. The project period has been extended to four years to get a sufficient number of informants.

Before further inclusion in the study, eating disorders are mapped with a revised version of the Eating Disorders Examination Questionnaire, EDE-Q adapted to pregnant women and women immediately after birth (16). The form is scored by the research fellow before further inclusion. EDE-Q is a self-completion form based on the "Eating Disorder Examination" (EDE) interview. EDE-Q measures the core symptoms of eating disorders. EDE-Q adapted to pregnant women and women immediately after birth is based on factor analysis. If the informant satisfies diagnostic criteria for a cut-off equivalent to ≥ 2.8 for an eating disorder, we will conduct a researcher-based interview, Eating Disorder Examination (EDE), for diagnosing the informant, and obtain standard background information. EDE is designed to assess the current condition, as well as to generate an operationalized defined eating disorder diagnosis. The interview is conducted after the experience interview.

The informants' background will be thoroughly documented. Background information will include data on age, gender, diagnosis, type of eating disorder, weight before, during and after pregnancy, onset of illness, first contact with the support system, relationships, first-time or multiple births. Background information is filled in by interviews after the experience interview.

Inclusion criteria will be that the woman is aged 20-40 and satisfies diagnostic criteria for anorexia nervosa, bulimia nervosa, overeating disorder or unspecified eating disorder (DSM-5). Exclusion Criteria will be people with additional problems related to ongoing psychosis, drug addiction or organic brain damage / disease because this will make it difficult to answer the research questions in this study.

Data collections

Information about the project will be disseminated, both orally and in writing via the network (see below). Before further inclusion in the study, eating disorders are mapped with a revised version of the Eating Disorders Examination Questionnaire, EDE-Q (28, 29) adapted to pregnant women and women immediately after birth (16). The questionnaire is completed by the informant with a representative from the network. The form is scored by the research fellow before further inclusion. EDE-Q is a self-completion form based on the interview "Eating Disorder Examination" (EDE). EDE-Q measures the core symptoms of eating disorders. EDE-Q adapted to pregnant women and women immediately after birth is based on factor analysis (15). If the informant satisfies diagnostic criteria for a cut-off equivalent to ≥ 2.8 for an eating disorder, we will conduct a researcher-based interview, Eating Disorder Examination (EDE), for diagnosing the informant, and obtain standard background information. EDE is designed to assess the current condition, as well as to generate an operationalized defined eating disorder diagnosis. The interview is conducted after the experience interview.

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multiple births. Background information is filled in by interviews after the experience interview.

Information about the issues is collected through a semi-structured, interactive face-to-face interview. The aim of the interviews is to get descriptions as precise and close to the participants' own experiences as possible. A semi-structured interview guide is designed in advance. The Interview Guide is developed in close collaboration with user representatives in the reference group and ensures that relevant input from the reference group is covered in the interview. The interview guide contains all the topics we want the interview to cover in advance. The interview guide is primarily a thematic guide and aims to prepare interviews as an instrument. It is also used as a summary and checklist for interviews at the end of the interview to ensure that all relevant topics are touched upon. The informants are thoroughly informed in advance about what the interview will be about and why, and how it will proceed. The better informed the informant is in advance, the better founded the voluntary participation. The actual interview takes the form of improvisation on the topics as it is natural from the dynamics that develop in the conversation. The informant can introduce their own relevant topics independently of the interview guide. The supervisors have published a double-digit number of scientific articles and trained thousands of clinicians and researchers with this method, which is informally called the "Experience Interview" developed by Arne Holte (19, 21-23). The interviews are quality assured by a professional who is not directly involved, continuously listening through randomly selected sections of randomly selected interviews and providing guiding comments. The purpose of this is to ensure that consistency and validity in the interview format is maintained.

Data-analyze

All interviews are transcribed verbatim, stored, organized, coded and analyzed in the electronic software NVivo version 11. Data for problem 1 will be analyzed according to the Grounded Theory method (25, 26). The analysis involves eight phases such as categories, theoretical sampling, identification of similarities and differences between categories, open coding, focused coding, negative case analysis, theoretical sensitivity, theoretical sampling, theoretical saturation, memo writing. The analysis will be regularly discussed in the research group and continuously monitored by the main supervisor to ensure reliability and credibility. Data for issues 2 and 3 will be analyzed according to the IPA method (27). Repeated listening and reading of each interview is carried out to get an overview and context. Each text is then explored using open thematic coding according to the "bottom-up principle". Each interview is divided into text excerpts that are given a definition based on the content of meaning and distributed in a tree structure. The definitions of potential constructions are finally tested against the text by confirmation and selective coding according to the "top-down principle".

Validation of the results will take place through focus group interviews with informants from the survey with varying stories. The number and selection of focus group participants depends on the results. The participants will be briefly presented in advance with the most important results in writing. The results will then be presented orally to the group. The group will be asked to comment on the presentations. The purpose is to investigate whether the informants recognize their experiences as they have been analyzed, presented and illustrated, and possibly adjust and correct this. We make audio recordings of the focus group interview so that a person who is not directly involved in the project will listen through and check the conclusions the research fellow makes from the focus group interview.

Procedure

The informants will be asked orally and in writing for consent to participate as described above: EDE-Q, EDE interview, "Experience interview" with audio recording, summary check according to interview guide and background information. Based on previous experience, the experience interview is expected to take 90-120 minutes. Total time spent per informant is calculated for a total of 140-180 minutes of interview hours (EDE interview, experience interview and background interview). The text is printed verbatim and stored electronically in NVivo 11. Audio recordings are deleted immediately after electronic storage. The electronically stored text is deidentified so that names and other clear characteristics cannot be recognized. After the data has been analyzed and before the completion of articles, validation is carried out using focus group methodology. All data is deleted when the survey is completed in accordance with the agreement with REK.

Organization –cooperations

The project will have academic, professional and administrative roots at the non-profit foundation Department of Eating Disorders / Villa SULT (Sommerfeldt, Skårderud, Clinton). The project is also affiliated with the Department of Psychology, University of Oslo (Holte). Department of Eating Disorders / Villa SULT has strong clinical and academic expertise in the area. The choice of supervisors covers different aspects of the project. All three supervisors have cutting-edge expertise in qualitative research. If the main supervisor cannot complete the main supervisor role, Skårderud will take over as main supervisor.

PhD candidate: Psychologist specialist Bente Sommerfeldt has broad health professional and clinical expertise and cutting-edge expertise in the treatment of eating disorders. Sommerfeldt currently works at the Department of Eating Disorders as a professional director and clinical psychologist. She is a co-author of several articles and textbooks. She has communication skills and has given a number of courses, educations, lectures and supervised a number of departments within child welfare, child and family services, psychiatry and intoxication on eating disorders, mentalization, parental mentalization and treatment, both nationally and internationally. See CV.

Main supervisor: Professor of Health Psychology (UiO) Arne Holte is previously a full professor of Health Psychology (UiO), Clinical and Personality Psychology (UiT) and Medical Behavioral Sciences (Med. Fac. UiO). He is one of the country's foremost experts on prevention and on advanced qualitative research methods. He has more than 140 international publications, 10 of which are qualitative studies of eating disorders, H-rating 28. Holte has supervised 16 completed doctoral degrees, as well as one in progress, in Norway and the USA and a three-digit number of master's and master's degree candidates. Holte is still a very active researcher and research communicator. Holte's main role will be to guide on method in all stages of the process, as well as to guide scientific writing and ensure progress.

Co-supervisor I: Professor, Ph.D. with Finn Skårderud is a psychiatrist, founder of Villa SULT and professor at the Norwegian Sports Academy. Skårderud has a doctorate in a series of qualitative studies of eating disorders. He is an internationally recognized expert on eating disorders with a large international network in both treatment and research in the field. He has supervised 11 completed doctoral degrees and has been an opponent in a number. He has supervised two completed PhD projects on mental illness and early parenthood. He is on the Editorial Board of the Journal of Eating Disorders. Skårderud's main role will be to guide on eating disorders, monitor the interview processes and interpretation of data.

Co-supervisor II: Psychologist specialist, Dr. psych Ingela Kvaem is a psychologist and researcher at Oslo University Hospital.

We have established a network that will collaborate in the form of recruitment, implementation and dissemination throughout the project period. The network is a direct collaboration with the users themselves. The network includes:

- Foundation Institute for Eating Disorders, Villa SULT (www.spiseforstyrrelser.no). The doctoral candidate Sommerfeldt and supervisor Skårderud are affiliated with Villa SULT.
- The health station Vestre Aker has entered into a collaboration with Villa SULT because they want increased competence in the field.
- Advice on eating disorders (ROS), www.nettros.no.
- The Eating Disorders Association (SPISFO), www.spisfo.no.

Time schedule

Before project start (December 2019): The reference group is contacted. Literature search and review. Apply for funding. Develop and test data collection procedures and methods. Reference group meetings.

By funding (2020): Apply for admission to a doctoral program at the Department of Psychology, UiO. Apply for approval REK. Register the study in clinicaltrials.gov.

First period (Spring 2020): Updating literature. Include mothers. Data collection before birth. Data collection after birth to group 2. Processing and coding of data continuously. Reference group meetings. Write the first draft of the introduction and method section of articles.

Second period (Autumn 2020 / Spring 2021): Follow literature. Further data collection before birth and start data collection after birth for group 1. Data processing, coding and analysis. Reference group meetings. Adjust article drafts.

Third period (Autumn 2021 / Spring 2022): Complete data collection after birth to group 1. Continued data processing, coding and analysis. Reference group meetings. Article draft adjustment.

Fourth period (Autumn 2022 / Spring 23): Reference group meetings. Focus group interview, final writing and publication of articles.

Fifth period (Autumn 2023): After completing a doctorate: Academic and popular communication.

Publishing

Scientific. We will publish three scientific articles that are sent to "open access" journals registered with the Directory of open access journals (DOAJ) such as the Journal of Eating Disorders, the European Eating Disorder Review or equivalent international journals.

Working titles:

1. *Trajectories of eating disorders through pregnancy, birth and early motherhood.*
2. *Eating disorder and emerging motherhood: Emotional, cognitive and relational experiences.*
3. *Helping women with eating disorders during emerging motherhood: Perceptions and experiences of support.*

Other. The Department of Eating Disorders / Villa Sult will produce videos that are posted on websites, Facebook and distributed via the network described above. We will write an

article on the topic of the Norwegian Journal of Nursing Research and the Journal of Midwives, and an article in the Journal of the Norwegian Medical Association. We will try to get the most important results into Nordic textbooks in gynecology and obstetrics. We will offer lectures and courses on the topic of medical education at the University of Oslo and we will offer the Norwegian Directorate of Health text for a brochure that can be posted in GPs' waiting rooms and at health stations. Workshops, conferences and educations will be developed and implemented.

Media. The videos will be open and accessible to everyone. We will inform about this in various Facebook groups and central channels such as Podcasts such as "Foreldrepodden", "Babyverden" ":", ". Through these forums, we will reach both the general public and various relevant user groups. In addition, we will offer a column and interviews to the Norwegian media where some of the supervisors are well known.

Ethics

The study is approved by the Regional Committee for Medical and Health Research Ethics (REK). Ethical reflections permeate the entire research process. Participation is voluntary. A well-understood information letter is presented to the informants. For other advance information, see Data Collection above. We follow the usual rules for informed written consent, withdrawal, deletion of material, de-identification and assessment of the consequences of participation.

Researching mothers' thoughts and experiences about their own health, body and self-image requires a high level of ethical awareness in the meeting with the informants themselves, as well as interview and text material. The theme of this project is occasionally sensitive. All participants in the project group are regulated by their respective professions' legislation on ethical conduct. The project group's clinical experience and experience with similar projects is as far as possible a guarantee for a safe and respectful situation where mothers can feel safe sharing personal information and talking about sensitive topics. Experiential conversations about difficult experiences in life can activate difficult thoughts and feelings. This requires professionalism from the researchers. This is taken care of by the fact that the interviewer is a specialist in clinical psychology with extensive experience in dealing with eating disorders and in that all the supervisors are very experienced with this type of conversation. Informants will not be their own patients.

Audio recording involves significant amounts of potentially personally identifiable material. All audio files are transcribed immediately and deleted after transcription and electronic loading. Before electronic loading, we will change personal names and all other easily identifiable characteristics. Should there exceptionally occur delays between interview and transcription or transcription and electronic loading, the data material is stored in a locked burglar-proof safe in Villa Sult. All findings published are anonymised. Quotes in published text will not be able to be linked to a person.

Budget and financial plan

Due to the project's time frame, it is desired that the project funds be spread over four years from January 2020 to December 2023 to ensure a sufficient number of informants and time to conduct interviews six months after birth (measurement T2). We are mainly applying for salary for a three-year PhD position spread over four years (75% position) for psychologist

specialist Bente Sommerfeldt with a view to qualifying for the academic title PhD. See attached budget in application form.

Scientific utility and practical utility values

Scientific utility

As described several times here, this is by far an unexplored field. The survey will be able to help fill knowledge gaps about birth and the body in the fourth trimester. Closing knowledge gaps and being an initiator and contributor to knowledge development and research on women's health is central to the strategic plan of the Norwegian Women's Health Association and this study could contribute to this. There is an obvious need for more knowledge, and not least knowledge based on the users' own experiences. Thus, this is typically demand-driven research. Research findings will not least clarify issues for further research projects.

Practical utility values

Prevention. The project is especially important because it promotes women's health and living conditions and provides an offer to women in a vulnerable phase of life. The project already complements the Sanitary Women's existing research on eating disorders, the body and the "beauty tyranny" and also pregnancy and postpartum depression (Mamma Mia). Increased knowledge of such phenomena, such as early clinical signs, and what is perceived as useful by the users themselves, opens up opportunities for information, information activities and campaigns. The study will also form an important basis and experience on what can help women to strengthen the bond with the child already from the fetal stage. This applies not least under the auspices of public health stations, user organizations and of organizations such as Sanitetskvinnene and Villa SULT.

Competence-enhancing measures. Through research findings, the study will lay the foundation for establishing competence-enhancing measures for health personnel who work with pregnancy, childbirth and childbirth. By placing the user as an expert on their own experiences, the survey will be particularly relevant for competence development among users, relatives and health personnel. Specifically, this means courses and content in educations. An important focus will then be how to promote well-being and health in mother and child during pregnancy and after birth.

Early intervention. Knowledge of risk factors and signs will promote security among health professionals to more actively and purposefully ask the woman more directly about the relationship to food, body and weight. Being asked will lead to a lower threshold for requesting and receiving help from the user himself. It will promote interventions at an earlier stage.

Better interactions between actors and levels in the health care system. The pregnant, giving birth and maternity mother necessarily meet many actors in the health care system, such as health stations, midwives, GPs and maternity wards, and occasionally also mental health care. Increased competencies also promote the opportunities for better collaboration and more targeted communication between the various parties involved. This also applies to family members.

Manualized programs and national guidelines. The results of the research project as well as experiences that accumulate in its wake will together form a competence basis for further development of these parts of our health care system. This can be expressed in the content of

health education and later establishments of local and national guidelines for how these women and their families meet.

User participation

We take care of the user perspective as follows:

1. A reference group with eating disorders with children who do not participate in the study participates in the method development. The reference group has been established in collaboration with the user organizations.
2. The very purpose of the survey is to bring out the users' experience. We interview face-to-face, personally pregnant and mothers are interviewed about their subjective experiences.
3. The experience interview is specially designed to cultivate in one's own words, as little as possible influenced by the researcher, precisely the users' own formulations of their feelings, thoughts and experiences.
4. IPA and Grounded Theory are used to refine user experiences and develop models based on these.
5. Focus group interviews are used to validate the findings among the informants before publication.
6. The project is a direct and close collaboration with health stations in Norway (which are users of the results) and two central user organizations for eating disorders. Findings in the project will be discussed with the user organizations during the project period.

Plan for continuation

The study will form the basis for information, information and campaigns at health stations and user organizations of N.K.S and Villa SULT. Increasing the action skills of nurses and midwives is an important next step. Based on knowledge from the study, we will develop a training program for nurses and midwives. The training program can be used at all health stations in Norway via e-learning. Such a program will have a strong focus on how to understand and meet women with eating disorders in a vulnerable phase of life and what can help women to strengthen the bond with the child already from the fetal stage. Based on the results, we will also in collaboration with health stations and user organizations create a guide for health stations on how to meet women with strained relationships with food, body and weight during pregnancy and childbirth. This guide and the training will be an important supplement to the guidelines for maternity care in Norway. The new guidelines for maternity care that came in 2018 have a greater focus on living habits and diet. It is therefore the midwife's task to ask about these topics, but it is probably different from midwife to midwife how she asks. One thing is that health professionals ask how the woman is doing. But just as important is that they know what to do with the answer that comes. Increased competence is in demand. Leader of the midwives' association Kari Aarø has stated that midwives have not been good enough at detecting eating disorders.

The results also form the basis for an intervention program for women with eating disorders who face pregnancy and childbirth. The intervention program will be a low-threshold offer for women with eating disorders during pregnancy and childbirth and a practical and simple tool to use at health stations in Norway.

Relevant further studies after completing the PhD may be on the interaction between mother and child and the relationship.

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