An exploratory study of perinatal depressive symptoms and its intersection with intergenerational coresidence among women in Kavrepalanchok, Nepal

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A thesis

submitted in partial fulfillment of the

requirements for the degree of

Master of Public Health

University of Washington

2023

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Program Authorized to Offer Degree:

Global Health

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Abstract

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This qualitative study delves into the intricate dynamics between perinatal depressive symptoms and intergenerational coresidence, with a specific focus on the relationship between perinatal women (pregnant women and new mothers up to 12 months postpartum) and members of the elder generation (parents and parents-in-law) living in the same household to identify the potential risks and protective factors associated with intergenerational cohabitation that influence perinatal depressive symptoms. Twenty-two in-depth interviews were conducted with perinatal women in Kavrepalanchok district of Nepal using semi-structured interview guide. The participants were identified purposefully through administration of demographic survey and a clinically validated Nepali version of PHQ-9. The interviews were audio-recorded, transcribed, and translated in English for thematic analysis conducted using Dedoose 9.4.20. Eleven major themes were identified that highlighted the challenges faced by perinatal women within the context of intergenerational coresidence and the benefits associated with child rearing. This

study shed light on the common sources of stress, such as incompatible value systems, assumed subordination, poor relationships, ineffective communication, and poor coping mechanisms that are potential risk factors influencing presentation of depressive symptoms. Positive interactions and effective communication between the two generations, as well as spousal support, were identified as significant factors that might mitigate risk of perinatal depression. The study highlights the crucial role of family context and support in influencing perinatal depression, and underscores the need for culturally sensitive support systems and family-centered interventions that address the challenges faced by perinatal women in intergenerational households.

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ACRONYMS & KEY DEFINITIONS

Acronyms

HICs	: High Income Countries
LMICs	: Low- and Middle-Income Countries
PHQ-9	: Patient Health Questionnaire - 9

Key definitions

Perinatal women	: Women who are pregnant or new mothers (within 1-year of childbirth)
Perinatal depression	: Mood disorder that can manifest at any time during pregnancy and up to 12 months after childbirth
Intergenerational coresidence	: Members of more than one generation living in the same household; considering parents and parents-in-law for the purpose of this study
Elder generation	: Incorporates accounts of relationship with parents and parents-in-law
Natal home	: House/family where participating women were born
Marital home	: House where participating women reside after marriage

INTRODUCTION

The health of women, especially maternal mental health, is a global priority for current public health interventions. Women of child-bearing age constitute two-thirds of all patients presenting with mental illnesses globally.[Error! Reference source not found.] Women in the perinatal period are vulnerable to depression.[Error! Reference source not found.] Even though pregnancy and childbirth are expected to be one of the happiest times in a woman's life, the transitioning to motherhood entails significant changes in the psychosocial, social, environmental, and biological domains, increasing the risk of developing depressive symptoms in the perinatal period.[Error! Reference source not found.,Error! Reference source not found.] This can have a significant negative impact on adaptation to motherhood, fetal development, bonding between mother and infant, and an overall well-being of family.[Error! Reference source not found.]

Perinatal Depression

Perinatal depression is a mood disorder that can manifest at any time during pregnancy and after childbirth.[Error! Reference source not found.] This includes major and minor depressive episodes that occur when a woman is pregnant - *antenatal depression* - and through the first 12 months of delivery - postpartum or *postnatal depression*.[Error! Reference source not found.,Error! Reference source not found.,Error! Reference source not found.,Error! Reference source not found.]

Epidemiological findings show that the prevalence of antenatal depression is 15-20% and that of postpartum depression is 20% in lower-middle income countries (LMICs).[Error! Reference source not found.,Error! Reference source not found.,Error! Reference source not found.] A recent study showed a 10 % point prevalence of antenatal depression in high income countries (HICs) and 15.6 % in LMICs, reflecting the disproportionate burden in LMICs.[Error! Reference source not found.] Further studies show that women presenting with depressive symptoms during pregnancy and/or in the

six weeks of childbirth run a higher risk of developing major depression at 12 months postpartum.[Error! Reference source not found.,Error! Reference source not found.] In fact, evidence from research in HICs recognize antenatal depression as a predictor of postpartum depression.[Error! Reference source not found.,Error! Reference source not found.,Error! Reference source not found.,Error! Reference source not found.] with almost 50% of postpartum depressive symptoms having an onset before or during pregnancy.[Error! Reference source not found.,Error! Reference source not found.]

Perinatal depression can have devastating effects not only on maternal health, but also on child development and family functioning.[Error! Reference source not found.,Error! Reference source not found.] It can negatively impact birth outcomes, physical growth, and childhood behavioral, emotional, and cognitive development.[Error! Reference source not found.] However, the burden of perinatal depression is often unrecognized due to underreporting, underestimation and hence, low priority in research.[Error! Reference source not found.,Error! Reference source not found.] Various predictors of perinatal depression have been studied including sociodemographic and clinical variables, but family dynamics, especially intergenerational coresidence remains under-investigated.

Intergenerational Coresidence

Intergenerational coresidence is when people of more than one generation - parents and adult children - live in the same household. Researchers assert that multigenerational cohabitation promotes economic, instrumental, and emotional support and facilitates social integration and solidarity.[Error! Reference source not found.] It is a norm in East-Asian countries that have a long-held tradition of filial piety i.e., a form of household structure associated with an attitude of obedience, devotion, and care towards one's parents.[Error! Reference source not found.,Error! Reference source not found.,Error! Reference source not found.,Error! Reference source not

FOUND. The subordination of daughter-in-law to the parent-in-law is a part of the culture whereby daughter-in-law is perceived to be an outsider coming from a different family.[Error! Reference source not found.] With such family values, daughters-in-law are expected to take initiative to make adjustments, show respect and obedience to the elder generation.

Country context: Nepal

Prenatal depression has been reported rarely in Nepali publications. Despite being prioritized as a sustainable development goal, perinatal mental health remains a neglected component of primary health care in Nepal.[Error! Reference source not found.] This can be attributed to under reporting because most presentations of perinatal depression are perceived as normal pregnancy-related changes.[Error! Reference source not found.,Error! Reference source not found.] In addition to healthcare providers not recognizing depressive symptoms during antenatal and postpartum visits, women in Nepal may be reluctant to report changes in their mood and emotions due to stigma associated with depressive symptoms.[Error! Reference source not found.,Error! Reference source not found.]

According to a recent study carried out in earthquake-affected districts of Nepal, there is an alarming prevalence (39%) of mental disorders in perinatal women; depression is not uncommon.[Error! Reference source not found.] The failure to diagnose and address such an important public health issue can have serious repercussions for maternal and child health.[Error! Reference source not found.] Although this finding cannot be generalized to other setting, it highlights the importance of exploring factors associated with perinatal depressive symptoms in Nepal.

Recent research exploring risk factors associated with antenatal depression in Nepal sheds light on the role that family dynamics can play in the development of perinatal depressive

symptoms. Though the primary focus is on spousal relationship and support, there has been discussion on how relationships with other members of the family can bring about stress and tension.[Error! Reference source not found.]

Nepal, like other Asian countries, shares patrilineal culture and the tradition of filial piety. Following marriage, women are expected to live in their marital home, with their in-laws. The sons bear the obligation of taking care of the parents while daughters take responsibility for the parents-in-law and the household they are married to.[14] There is increasing expectation for women to shoulder a larger role in family and childcare.[1,9] Acculturative stress from adjustments to new lifestyle for example, adopting new behaviors and customs while maintaining culture from the natal home i.e., maternal home where one is born, can produce family conflicts and make women vulnerable to developing depressive symptoms.[9] Moreover, when a woman is pregnant, childbirth is not just the couple's concern, but the entire family is involved – particularly female members such as mothers, mothers-in-law, aunts and sisters.[9,12] Elder generations hold traditional beliefs about antenatal and postpartum care - diet, environmental exposure, emotional state, activity restrictions, etc. - which are predominantly oral and have no scientific evidence.[12] Researchers report women feeling compelled to agree by accepting the recommendations of the elder generation and their struggle to fight their frustration in silence.[12,16] The involvement of grandparents renders new mothers' feelings of being inadequate and falling short in their duties. Consistent exposure to such stressors in the household increases the risk of perinatal depression.

Women of newer generations, with autonomous and liberal values, struggle to cope with such expectations resulting in conflicts and stress.[13] One study in East Asia concluded that poor relationship with parents-in-law, particularly mother-in-law, was significantly associated with

antenatal depression.[1,12] Postnatal women have identified conflict with mothers-in-law as a major source of stress contributing to depressive symptoms and recall enduring unkind comments and behavior from parents-in-law.[11] This has been attributed to the possibility of heightened conflict between new mothers and grandmothers when the two generations have contrasting or incompatible value systems.[11,12,13]

The context in which women raise their children has greatly changed in the past decade with increase in the literacy rate, access to healthcare, newer technologies, and research, etc.[17] Studies on perinatal depression still focus on demographic and individual risk factors and not on psychological or interpersonal factors such as value systems (i.e. mother is expected to put family needs first before her own) and prevention of conflict in families.[17,19] Further, undiagnosed antenatal depression can have adverse impacts on perinatal outcomes including obstetric complications, preterm births, and postpartum depression; and postpartum depression can impact maternal, child and family well-being. [12,17] This study aims to tease out the psychological and interpersonal factors associated with intergenerational coresidence and their possible influence on perinatal depression in Kavrepalanchok, Nepal.

CONCEPTUAL FRAMEWORK

In settings like Nepal where filial piety is appreciated and intergenerational coresidence is common, it is desirable that elder generations live with their adult children. Family well-being has been linked to intergenerational co-residence in research.[10] The family support theory posits that living with adult children provides material, emotional, and instrumental support and enriches the parent-child relationship as well as promotes social integration. [17,18] In contrast, the family conflict theory points to problems within the family that may be overlooked. It suggests

that parents may find it difficult to have a good relationship with their adult children living in the same household because they may have quite different values. [10,17,18] There is evidence, though scarce, that marriages and relationships between parents and their children are affected by childbirth. Changes in family relationships, challenges to lifestyle adjustments, and conflict between two coresiding generations can produce tension and thus damage the health and well-being of individuals in the family, especially new mothers. [10,11,13] This may negate any benefits of intergenerational support and compromise the wellbeing of individuals in the family.

The socio-ecological framework can demonstrate the intersection of perinatal depressive symptoms and intergenerational coresidence. This framework (figure 1) is widely used in mental health work to illustrate how individual, family, organizational, community and societal factors influence individual mental health.[19,20] The socio-ecological framework helps recognize that one health outcome is affected by a complex range of interactions between multiple levels and these interactions vary by individual or context based on cumulative and intersectional experience.[20]

For this study, we will narrow our perspective to the first two levels – individual and interpersonal.

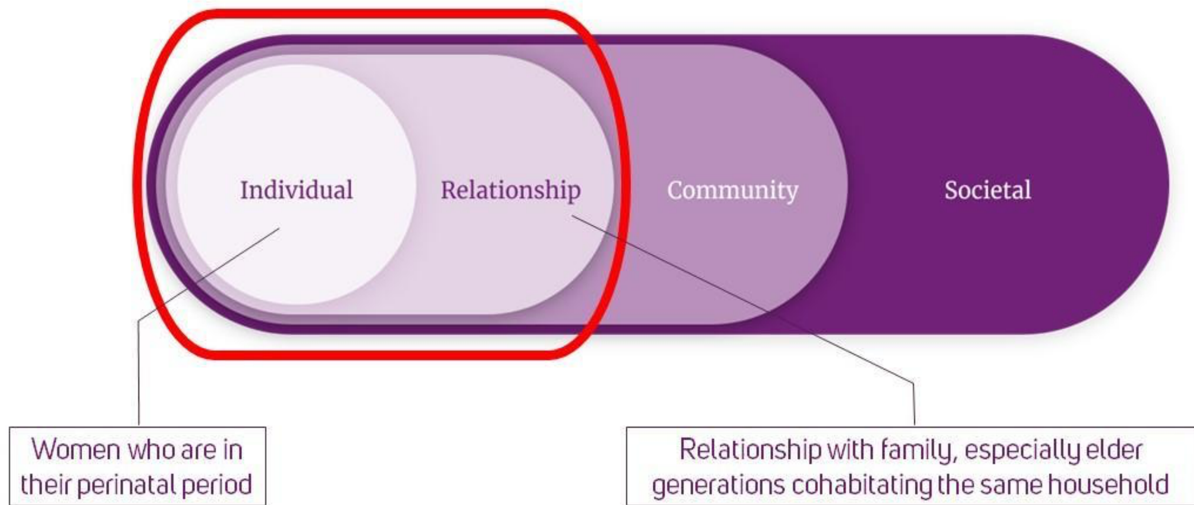

Figure 1: *Socio-ecological framework with focus on individual and interpersonal levels of interaction in relation to perinatal depressive symptoms.*

There is an interplay between individual, interpersonal, biological, psychological, and environmental factors involved in perinatal depression. Here we explore the potential intersection of intergenerational coresidence with individual factors influencing development or prevention of perinatal depressive symptoms. The following modified version of the biopsychosocial model of perinatal depression (figure 2) illustrates how changing intergenerational dynamics can influence perinatal depression.

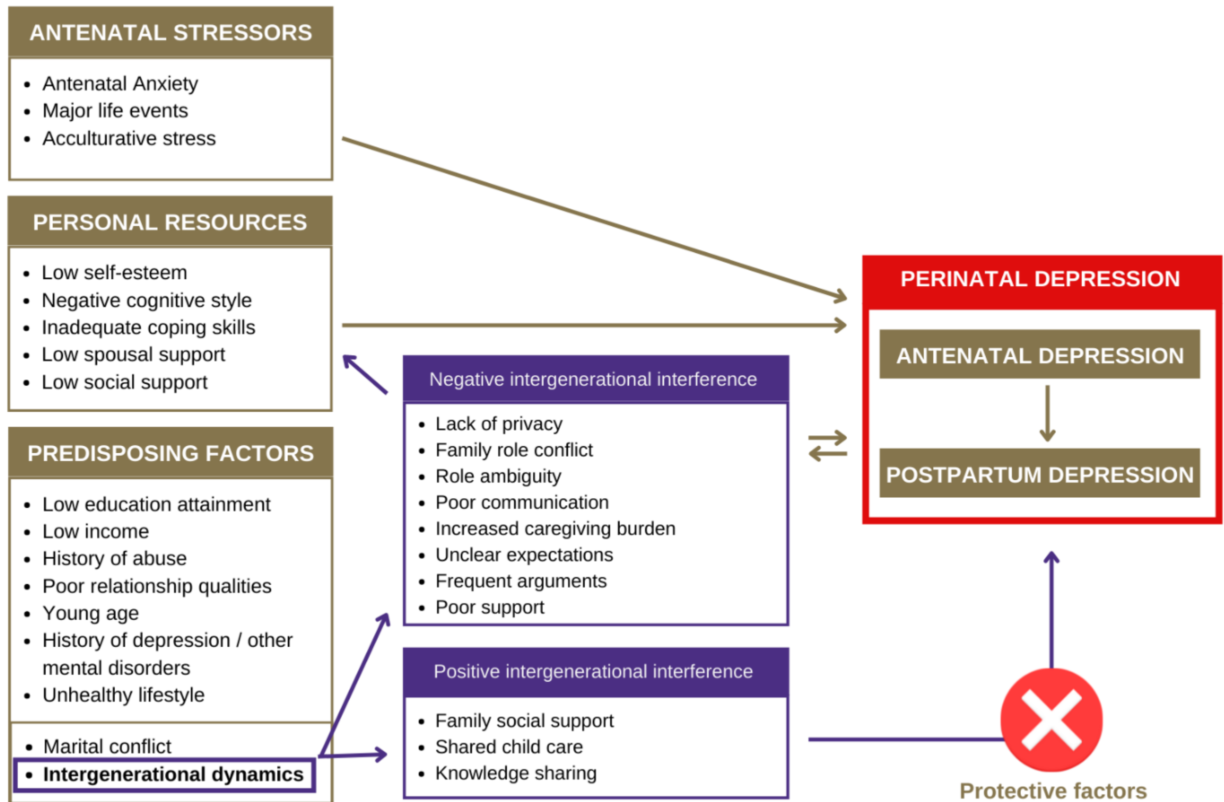

Figure 2: *Modified version of the biopsychosocial model of perinatal depression illustrating factors influencing perinatal depression.*

This framework outlines the potential factors leading to perinatal depressive symptoms. Drawing focus on the intergenerational coresidence, it highlights the positive and negative interferences in a family with members of multiple generations which in turn influence individual factors such as self-esteem, coping with stress, etc. The subtle interactions between the individual and interpersonal factors depicted in the framework are often neglected or unrecognized, leading to outburst of conflict during vulnerable periods such as pregnancy. [17,20] A study regarding interpersonal functioning shows that repeated suppression of emotions, or avoidance of conflict will result in salient negative cognitions and interferes with effective problem solving.[17] These together influence the development of depressive symptoms. On the contrary, positive interactions or interferences such as shared childcare and support will help a

new mother face transition and fulfill the changing demands with pregnancy, preventing development of depressive symptoms.[17]

STUDY GOALS AND RESEARCH QUESTIONS

The general objective of this study is to explore the factors associated with intergenerational cohabitation that may influence perinatal depressive symptoms among women who are pregnant or in their postpartum period in Kavrepalanchok, Nepal. Specifically, we focus on identifying value systems and psychosocial vulnerabilities within the household. The following research questions will address the research objective.

- What are the relationship dynamics between perinatal women and elder members (Parents and parents-in-law) living in the same household?
- What may be potential risk factors (i.e., stressors) associated with intergenerational cohabitation that can lead to perinatal depressive symptoms?
- What may be potential protective factors associated with intergenerational cohabitation that can prevent perinatal depressive symptoms?

METHODS

This study is an inductive, exploratory research guided by grounded theory.[21,22] This study also embraces phenomenological methods[22] in incorporating an emic approach to understanding women's experiences about the benefits and challenges of multigenerational coresidence through their stories.

Study setting

The study was conducted in Kavrepalanchok district in Bagmati Province of Nepal, with Dhulikhel as its district headquarters located 30 km south-east to the capital city, Kathmandu. The district covers an area of 51,396 sq. km.[23] and has a population of 381,937 with a population density of 270 per sq. km.[23,24] The average family size in the district is six members.[24] The ethnic distribution comprises 34.5% Tamang, 21.5% Hill Brahmin, 13.3% Chhetri, 13.2% Newar and smaller proportions of Magar, Janajati, Tharu and others.[23] The district has many small healthcare centers with Dhulikhel Hospital, a Kathmandu University hospital, as the major referral center. The Maternal Child Health (MCH) building of Dhulikhel hospital was the primary site for participant recruitment. Interviews were conducted in-person both in the hospital premise and other suitable locations in Dhulikhel. Participant privacy was ensured.

Sample

The study targeted perinatal women - with confirmed pregnancy or those within one-year postpartum - residing in Kavrepalanchok district during the study. Mixed criterion-based purposeful sampling approach[25] was used to select 25 women in different perinatal stages for in-depth dyadic interviews. A demographic screening survey and a clinically validated Nepali PHQ-9 (Appendix I) [26,27,28] was administered to women visiting Dhulikhel Hospital for antenatal, postpartum, and pediatric care at the beginning of the study. This allowed identification of all cases that met the defined interest criteria. Women with confirmed pregnancy or in the one-year postpartum period presenting different levels of depressive symptoms were considered for the interviews. Such an approach was necessary to identify the right informants for effective data collection in accordance with the topic and aims of the study.[25,29] Maximum variation in the sample was ensured by purposefully selecting women with varying demographic

characteristics – maternal age, ethnicity, education attainment, and socioeconomic status - and PHQ-9 score. Multiparous mothers were excluded from the study because some studies have established that multiparous mothers (women who have birthed more than once) are at a lower risk of perinatal depressive symptoms compared to primiparous mothers (first time mothers).[30,31] All primiparous mothers – singleton and twin pregnancies – were considered and two women who birthed twins were included in the study.

Inclusion criteria:

- Married women in residing in Kavrepalanchok district
- Maternal age 20-40 years
- Confirmed pregnancy or postpartum with estimated delivery date after February 2022
- Living in intergenerational household, with at least one member of elder generation
- Primiparous women (first pregnancy or first-time mothers)
- Visiting Dhulikhel Hospital for antenatal care and postnatal visits
- May or may not have sought mental health services

Exclusion:

- Perinatal women living in nuclear family structures
- Mothers with new-born having congenital abnormalities
- Perinatal women unwilling to participate in the study (no consent)
- Multiparous women

Participant recruitment

Women meeting the eligibility criteria were identified from the screening survey and were purposively sampled to include different ethnicities, maternal age, education, and employment status. The PHQ-9 scores were used to purposefully introduce variation in the

sample. They were prepared for the interviews via phone calls and a brief meeting during their regular hospital visit. Written consent was provided to them to read and sign. Women who consented were scheduled for the interview.

Data collection

Data collection was conducted in two phases – assessment of depressive symptoms and in-depth dyadic interviews.

Assessment of Depressive Symptoms. The assessment comprised a structured questionnaire including demographic questions and the PHQ-9 questionnaire adapted in Nepali and keyed into a digital platform. PHQ-9 was used as a paper-based screening tool completed by the mother[16,26] with demonstrated reliability and validity as an instrument to screen for depressive disorders during pregnancy and after childbirth.[27,28] Women visiting Dhulikhel hospital for antenatal, postnatal, and pediatric care completed PHQ-9 assessments. The participants of the survey were informed about the study and potential selection for the next phase i.e., interview. Women who consented were administered the survey. The PHQ-9 was not used for formal diagnosis of perinatal depression and individual scores were not disclosed to the patients but used solely for background information on participants who completed interviews.

In-depth interview. Semi-structured interview guide (Appendix II) was prepared and pilot-tested with three mock interviews. Feedback from the mock interviews were incorporated to finalize the interview guide.

Two researchers administered the interviews - one interviewer and one notetaker. Given the sensitivity of the issue, both researchers were women. The interviews were conducted in the Nepali language. Location of the interview was selected considering participant's convenience and comfort. Some interviews were conducted in the hospital premise scheduled based on

participant's service visitations. For those who were not able to visit the hospital, interviews were conducted in their neighborhood ensuring privacy to share sensitive information. Each interview lasted 40-60 minutes with breaks in between as desired and needed. Impressions and field notes were included for each interview to aid data triangulation during analysis.

Data Management and Analysis

The audio recorded interviews were transcribed and translated in English for thematic analysis. Certain essence of the interviews may have been lost in translation due to difficulty in direct translation of metaphors and idioms. All identifiable information relating to the respondent was removed to ensure confidentiality and each recording was assigned a participant ID to ensure de-identification. Dedoose 9.4.2 was used to manage and analyze the qualitative data.

Codebook development: A hybrid of inductive and deductive coding approaches were used to formulate the codebook. Starting with a small set of deductive codes based on the research questions, frameworks used and interview guide, the anticipated themes and framed prospective codes that would be useful for document excerpting were listed. Two transcripts were chosen based on their impression during the interviews and translation processes. A team of three coders thoroughly read the transcripts and came up with relevant codes - first individually followed by a meeting where each presented their codes, and a final list of codes was established. Code groups were created to put similar comments together.

Code application and excerpting: After the initial round of coding, the coders went back to individually code the same two transcripts with the list of codes, and one new transcript was assigned to each coder. The team then swapped transcripts and reviewed the codes applied by fellow coders in an iterative process of reading, coding, and re-reading the transcripts. This

process allowed us to merge some codes and delete ones that appeared less frequently or did not help answer the research question and establish consensus on the use of each code.

To establish dependable and consistent coding techniques, the team implemented a variety of rules and tactics. We held regular team meetings to ensure that all members had a shared understanding of the coding, and to address any coding difficulties or disagreements in the process. We employed a consensus-based approach to resolve any discrepancies in the coding decisions. We also performed inter-coder reliability checks to evaluate the constancy across the team. By comparing coding decisions and resolving any differences the team ensured that the coding practices were precise and dependable.

The remaining transcripts were then randomly assigned to the three coders and coded individually. Any confusion in applying codes or ideas about adding new codes, changing code descriptions, etc. were recorded in memos and discussed during weekly meetings. Overall, the team used a rigorous and iterative process to ensure consistency and accuracy in the coding process.

Late-stage analysis/interpretation: After the coding process was complete, the coded excerpts were extracted in the excel format to identify patterns and generate themes through reflexive thematic analysis where initial codes were merged with other codes to capture the essence of underlying factors influencing perinatal depression.[32] The socio-ecological model of health and the biopsychosocial model of perinatal depression used in designing the study were used to categorize data and visualize patterns across different levels of influence - focusing mainly on the individual and interpersonal levels and trying to tease out the relationship dynamics between pregnant women or new mothers and the elder members living in the same

household. The data categories were used to build concepts and themes. This process was continued until thematic saturation was obtained.

Positionality

I am an educated Nepali mother identifying as a Newar. I bring a personal and experiential perspective to this research on perinatal depressive symptoms. I have a deep understanding of the emotional and psychological challenges faced by perinatal women in my cultural context. Being familiar with the societal and cultural nuances of Nepal, I am well-positioned to navigate the complexities of intergenerational relationships within households. However, I recognize that my positionality is shaped by my privileges and access to resources in the community, and I am cautious to not make assumptions based on my own experiences and opinions.

In terms of my research stance, I recognize that perinatal depression is a social phenomenon that exists outside of my own experiences and has real-life implications. At the same time, I acknowledge the importance of understanding the subjective experiences and interpretations of individuals involved. I aim to find a balance between exploring the underlying structures and patterns within intergenerational relationships while also valuing the individual narratives and lived experiences of the participants.

RESULTS

A total of 190 women visiting Dhulikhel hospital were surveyed for screening, 63 were identified as eligible and 22 were interviewed before reaching data saturation. The interviewees were women between 20 and 40 years of age, pregnant or first-time mothers, in various stages in the postpartum phase, and living in intergenerational households. They differed on their ethnicities, education attainment, employment, and age as presented in *Table 1*. Most of the participants had singleton pregnancies, two had twins. There was variation based on their PHQ-9 scores ranging from 0 to 22 as presented in *Table 2*.

Over half the women (n = 14) reported experiencing perinatal depressive symptoms. None of them had a formal diagnosis with perinatal depression prior to or during the study but identified symptoms as listed in the interview guide. The reported duration of perinatal depressive symptoms varied from two months to a year. Others (n = 8) reported no experience of depressive symptoms in the last two weeks.

The most common stressors in pregnancy, as reported by participants, were - (1) pregnancy-related symptoms (morning sickness, sleeping difficulties, mood swings, tiredness, fear of complications); (2) lack of support from their family and partner; and (3) history of miscarriage.

"I try my best, but they are never satisfied. It wouldn't be this way if I lived with my parents. I don't know what to say. Sometimes I feel like leaving the family and staying alone." - IDI016

"I was worried about complications associated with the pregnancy. Also, my head was filled with thoughts like I should not travel a lot during this period. I was worried about the food that I can and cannot have, I should be careful about a lot of things. I should not do heavy work but light work. Things like that." - IDI012

Table 1: *Demographic distribution of interview participants*

Demographic variables	Categories	n (%) [N=22]
Age (in years)	20 - 25	5 (22.7%)
	26 -30	9 (40.9%)
	31 - 35	7 (31.8%)
	36 - 40	1 (4.5%)
Ethnicity	Newar	9 (40.9%)
	Brahmin	3 (13.6%)
	Dalit	3 (13.6%)
	Tamang	2 (18.2%)
	Janajati	2 (9.1%)
	Chhetri	1 (4.5%)
Education attainment	School (up to 10th grade)	3 (13.6%)
	College / Diploma	9 (40.9%)
	Undergraduate	6 (27.3%)
	Postgraduate	4 (18.2%)
Employment status	Housewife	14 (63.6%)
	Employed	6 (27.3%)
	Self-employed	2 (9.1%)
Perinatal status	Pregnant	2 (9.1 %)
	Postpartum (0-3 months)	9 (40.9%)
	Postpartum (3-6 months)	5 (22.7%)
	Postpartum (6-9 months)	2 (9.1%)
	Postpartum (9-12 months)	4 (18.2%)

Table 2: *Distribution of PHQ-9 scores among interview participants*

Category	PHQ-9 Score	n (%)
No / Minimal depression	0 – 4	7 (31.8%)
Mild depression	5 – 9	9 (40.9%)
Moderate depression	10 - 14	4 (18.2%)
Moderate-Severe Depression	15 - 19	0 (0%)
Severe Depression	20 and above	2 (9.1%)

The most common stressors for postpartum period, as reported by the participants, were - (1) changes associated with childbirth (sleep deprivation, problems with breastfeeding, mood swings); (2) postnatal lifestyle adjustments (finding it hard to manage added responsibilities, feeling of inadequacy, transition into parenthood); and (3). Lack of support from family (feeling neglected, loneliness).

"Maybe a day before the name-giving ceremony I couldn't breastfeed due to the intense pain of the wound. [...] I didn't even want to look at my baby. Sometimes when he used to cry, I felt like, "oh no I have to feed him now. I will again have to bear the pain". Later when we started feeding him bottled milk, I used to avoid my baby a lot. [...] For a few days, I didn't even want to look at him. I didn't feel the attachment." - IDI012

"[...] sometimes my child cries a lot because my milk is not enough for her and that gives me a hard time. I will also feel like crying along with her. And sometimes, I don't know why but she cries continuously for a long time. She doesn't stop even if I breastfeed her. We need to carry her around to calm her down. I worry a lot when this happens." - IDI011

Women reported experiencing challenging situations before, during and after pregnancy that may lead to changes in their behavior. The most used terms to describe their experiences were

feeling low, tired, loss of appetite, difficulty sleeping, anxious, not wanting to see the baby, unwilling to socialize, lost interests, and crying without a reason.

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*"I used to feel like **crying without any reason** while I was alone at home. I had no idea what to do. When there was no one at home, I used to feel **lonely**." - IDI010*

*"I used to do tailoring work before but after becoming pregnant, I just felt like **sleeping all the time, loss of interest in eating too, loss of sleep**. It may be due to tension." - IDI020*

The following section present the themes that emerged during analysis.

Relationship dynamics between perinatal women and the elder generation

Theme 1: Women have better relationships with their parents than parents-in-law.

The interview participants were asked to describe their families on both sides - natal and marital - and the relationship with the elder members of the households. Participating women shared they felt different living with their own parents and with their parents-in-law after marriage. They talked about how their life changed after marriage and especially after having a child - challenges in adapting to the new lifestyle and how it affected them. This was more prominent in women who came from a nuclear family and married into a joint family.

"Earlier I used to live as I wished, it was different. I had no restrictions. But when I came to this house, I had to be careful, keep my parents-in-law happy. Abide by the rules here. I had to cook and clean since early morning to fit everybody else's schedule. And after becoming a mother, it has been a challenge. I need to take care of his food, clothes, everything about him." - IDI016

Women felt that even though both sides were parents, they experienced differential treatment in their marital home citing a sense of lost freedom when living with their parents-in-

law compared to with their parents. Most of the women shared that they needed to be careful and behave a certain way with their parents-in-law, a sense of subordination. In contrast, they felt carefree in their natal home. They also shared having more freedom to express themselves and make decisions in their natal home, while feeling restricted in their marital home.

"In my maternal home, I feel the freedom to do what I want and eat what I feel like. Here, it is different. I feel shy or awkward to take and eat what I want to. Even when I really want to do something I have to think about how others will react. I feel afraid and shy and so I cannot eat freely." - IDI016

Some women expressed how living in the same household with their parents-in-law came with an assumed sense of responsibility to manage everything; and a fear of consequences, which led to feeling bound and awkward.

"[...] as a daughter I helped around the house, but even if I said I won't help or refused to do something, there were no consequences. I had free will. It is not like that here. Whatever happens, I need to start with the household work early in the morning, prepare food and manage everything. [...] I feel bound and awkward. It is not like they have said anything to me or they scold me, but I feel responsible and it just feels different. I fear if they will say something or get angry at me." - IDI017

When comparing their relationships with their parents to that with parents-in-law, some women made comments about how it is easier to communicate with their mothers compared to the mothers-in-law.

"One feels comfortable to share problems with her mother rather than her in-laws. You know, if you don't like anything about your parent's you can say it out loud, get angry, throw a tantrum sometimes and raise your voice. But you cannot do this in your marital home. I wish that the environment at my in-laws' home would be more open and accepting of these behaviors so that I can share things with them and not think about it a lot." - IDI002

Two of the participants shared how they never felt accepted and appreciated in the marital home citing that they were treated differently. One of them shared that it would hurt her parents to know about how she lives there.

"She cares for her son so much, like he is so special. I am special too; my parents did not birth and raise me dancing in a disco. They had their share of hardships to raise me. They have married me to a house where I am treated like some servant. Won't my parents feel bad when they see me working like this in someone else's house? My mother-in-law always shares how hard it was for her to raise her son and how well she has raised him, as if everybody else has it easy. I know how my parents raised me with so many challenges. They value me as much as she values her son." - IDI017

Some women shared about the changing relationship dynamics with the elder members of the household after conceiving or birthing a child. They shared how their parents-in-laws have started to care for them. However, a few women shared concerns that the changing dynamics was mostly love and care for their grandchildren and not for themselves (daughters-in-law).

"I felt more loved and closer to family members after the arrival of my baby boy. I feel like the family members are more caring, supportive and we mingle a lot. We have a better bond after having the baby." - IDI002

In all these conversations, women mostly referred to both parents in their natal home but only mothers-in-law in the marital home. There were only a few accounts of interaction with the father-in-law - mostly positive.

Theme 2: Perinatal women felt better supported by their parents than parents-in-law during pregnancy and after childbirth.

When discussing the challenges with being pregnant and having a newborn and looking at how the elder members of the family supported them, more than half of the participants felt like their parents supported them better than their parents-in-law. Some shared that they did not feel supported enough by the parents-in-law. One participant shared how her parents-in-law never came to visit her at the hospital after a complicated delivery and her mother stepped in to take care of her. Some women shared how their parents would go beyond themselves to take care of them.

> *"I feel the amount of care we get from our own parents is not the same as we get in our husband's home. I felt that. When I was in the hospital after delivery my mother stayed there with me for 5 days and took care of me. A few days after she left, we were on a video call and she saw that my baby had rashes all over his body. She immediately said she wouldn't leave me with people who did not care and would come to take me home. She said if my family had taken good care of the baby, there wouldn't be such rashes. I also felt the same. There was no way I could take care of him at that time as I was bedridden myself. I felt bad and neglected. My mother and even my father felt that way. So they came to take me and I went with them." – IDI018*

One participant talked about regretting not being able to visit her parents and missing their mother, especially during the early postpartum phase.

> *"Nobody will treat you as your mother does. It is very different how my mother and mother-in-law treat me. My mother-in-law cannot do what my mother does. If I was with my mother at that time, I would be relieved. I wouldn't have to worry about cooking for everybody or doing other chores. I could rest and my mother would cook for me, clean my clothes, and give me oil massages. I would have recovered well. I couldn't go because it is quite far, but I wish I had. It pinches my heart that I didn't go. If I went there for even a few months maybe, not even for a long period, I would get good care." - IDI017*

Even during the pregnancy, women preferred to stay with their parents citing better care and support. Some women shared that they did not feel like returning to their maternal home afterwards.

> *"During pregnancy, in the third month, my doctors advised bed rest citing some complications. At that time, I went to my maternal house. I stayed there for about a month and half. I didn't come here (marital home) at all." - IDI018*

Possible risk factors for perinatal depression

Theme 3: Perinatal women felt the pressure to conform to the traditional practices and beliefs when living with the elder generation (esp. mothers-in-law)

Many participating women shared that member of the elder generation held traditional beliefs about antenatal and postpartum care - for example, advice on diet, environmental exposure, activity restrictions, etc. - which conflicted with modern medical advice. But they had to conform with the elders and practice certain things despite disbelief or not wanting to do it.

> *"[...] my mother insists on oil massaging. I have allergies and rashes on my skin when I do that. But she says my body will be weak if I don't oil it during this period. [...] you can see I have rashes all over my face. It hurts and is very uncomfortable. But they don't understand and keep insisting on putting oil. I feel like not using any oil as much as possible because I did not have any skin issues earlier. All this started after an oil massage. I understand it must have some benefits. I don't like it, but still I put it on every other day." - IDI006*

Some shared their experience of not being able to take a stand and having to follow the instructions of the elder generation in the household. If the new mothers refused to do something, the mothers-in-law would find ways to secretly do it. A few participants shared instances where it was harmful for their child to obey the elders, but they wouldn't understand.

"Elder generations used to keep children in front of the fire in winter. One time, my mother-in-law insisted we do the same. My child could not breathe properly, and we had to take him to the emergency room. He was admitted to the hospital for 10 days with an oxygen mask. It was really painful to see him like that. They still don't understand. [...] She still believes it is nothing. She says doctors say anything to make money; this might be a coincidence and won't happen again. Even some elderly neighbors say the same."
– IDI017

Some new mothers felt compelled to accept these recommendations from the elder generation, even if they conflict with modern medical advice, leading to frustration and stress as they struggle to reconcile the conflicting advice while maintaining harmony at home. The constant interference from the older generation made some participants feel inadequate. Even when new mothers did as they believed to be right, they would hide it from the elders thinking they would never accept new practices.

"When I thought of doing things my own way, it would feel bad that I would hurt my parents-in-law. So, I was very disappointed with myself that I didn't do things as I had planned though being educated and had knowledge about it just because my elders said it to be done a certain way." – IDI005

Some of the participants expressed how the mothers-in-law passed subtle comments when they did not comply with their beliefs and practices to imply that what they think about and do is the right way.

"Sometimes, when I try to share new information with them or tell them that times have changed and this is how things are done now, they cancel me out. They dismiss everything I say with arguments like I am trying to dominate because I am educated. They state that they have raised children as well and what they are thinking or doing is the right way. They think we are disobeying them or trying to be modern. So, they don't want to and cannot understand what we go through. They are still stuck in the old times, and we are facing the future." - IDI022

Theme 4: Inadequate support from the elder generation led to constant hurting and frustration in perinatal women.

Many women felt that they were not adequately supported by the elder generation in their household during pregnancy and after childbirth. They reflected on how they could not get much rest from the household chores until the later stage of their pregnancy. A few women recall being sent or going to their parents when they were no longer able to take on everyday duties. Women also went to their parents when they had to rest or had a complicated pregnancy.

Women shared how they fulfilled their responsibilities until the later months of their pregnancy but did not feel appreciated or receive the same support back. Although they were tired due to the pregnancy, their work or other reasons, the parents-in-law implied this as laziness or inefficiency and did not offer to help.

"I used to keep working in the house, and cleaning around because I don't like to stay idle. Even when I was very near to the due date, I had to cook food and do all the household chores. It was really difficult. I had a huge stomach as my baby was big and he was not in the correct position, so I had difficulty bending. This added to the challenges. I didn't feel any difference in the beginning, but I didn't receive any help at the time when I need it most. I feel that way. [...] towards the end when I had difficulties moving around or even generally, they made comments like it is because of lack of exercise. They implied I did not exercise my body enough. I felt very bad at that time. I never got any help with my work during the entire pregnancy, but even after that how could they say I did not move around or exercise. I was hurt." - IDI009

Postpartum women were expected to resume their household responsibilities even prior to achieving full recovery. Women also reported feeling neglected during pregnancy and after childbirth citing how they never realized that mothers need care as well; everybody focused on the child.

"In the first month of having the baby, I was recovering from the operation. So, I rested and ate in bed. But soon, my mother-in-law said I should start working around the house myself. My husband used to help me; he still does. But I wouldn't say anybody else supported me. My mother-in-law would say she raised 4-5 children and managed to do everything by herself so I shouldn't make these excuses and do things myself. So, I tried to do everything by myself." - IDI017

Theme 5: Hidden stressors related to social and cultural norms affected perinatal women more than at other times.

Social norms of subordination by daughters-in-law and other differential treatments by the in-laws compared to biological daughters always introduced a subtle stress.

Women reported feeling a constant pressure to do things right and never being able to become a daughter to the in-laws. Pregnancy and childbirth had significant effects on women's emotional and psychological wellbeing, as well as on their interactions within the family further exacerbating the stressors. Women reported that they felt more sensitive to everyday issues than before and felt easily hurt during the perinatal period. Some women constantly felt inadequate and had a sense of guilt for not being able to manage time and resources for their children.

"I feel even weaker now. I was so strong before. I didn't take things to my heart. I did not overthink what others said about me. But these days maybe because of so much difficulty in having the baby, even if he cries a little, I get so hurt. I have started crying with him." - IDI018

"I feel very guilty. I blame myself – I have not been able to manage time, I have not been able to do it. After my pregnancy, I feel tired and cannot wake up as early as I used to. I wake up around 6:30-7am. Maybe because I wake up so late, I do not have enough time to manage everything. I cannot blame it on others, it is my child, and I must take care of him. I feel like it would be easier if others helped me around the house." – IDI017

Some women struggled with a lack of excitement about the baby. Some women experienced difficulties with bonding with their babies after giving birth, which included not

enjoying taking care of the baby and feeling like they were losing their identity. These difficulties led to a sense of disconnection or block between the mother and child. Women blamed themselves for not being prepared, marrying, or having a child early in their lives.

"I have such feelings sometimes. I feel like I had a baby very soon after marriage. If I had done something, it would have helped us in the future. But now after I had a baby, I can't do any other things soon." -IDI003

I feel like I don't have time for myself. I feel that way. Honestly, I cannot even go to the toilet in peace. It is difficult to manage everything alone. It is like this, I used to work as I wished and as it suited me. Now I feel like I cannot concentrate much on anything. There's the baby. I need to handle him, but there are too many things going around all the time. - IDI016

For some women, pregnancy was good news, but they were worried about having a daughter because the elder family members still prefer to have sons. Some women also shared how societal norms and comments about appearance and related expectations stressed them.

"I always wanted a daughter and I have one now. For me, I don't think it is necessary to have a son. Daughter or son, they are the same to me. I am very happy with my daughter, and she is enough for me. My mother-in-law does not think the same way. They still have old values, and I cannot do much about that." - IDI011

Theme 6: The inability to communicate expectations and establish boundaries with the in-laws can contribute to feelings of isolation and stress.

Women shared how they expected love and support from their parents-in-law when they were pregnant and as new mothers but never received it. When they tried to share their feelings, it was received as some sort of disrespect towards the elders in her household.

"My expectations weren't met. I did not communicate that either. I thought during my pregnancy everyone will be happy and more caring. I thought they would understand my condition, tell me to rest, tell me they are there for me and share my workload, but nothing as such happened." - IDI018

The norm being obedience and respect to the elderly, women are taught to accept their fate and live in subordination. They have been instilled with a notion that if they do not comply with the norms of their marital home, they will be sent back. Thus, their comfort for communicating issues or even general communication depends on their relationship with each elderly member individually. One participant shared how her mom asked to manage things herself when she tried to share the sufferings in her life.

"I say nothing. I cannot. I just cry. I should not talk back to my parents-in-law, they are my elders. So, I just share with my husband what has happened, and he consoles me. He says I should be more understanding because they are elders to me and I'm their daughter-in-law. He tells me to let it go and be more practical. He expects me not to escalate situations like those. So, I try to convince myself to let go." - IDI011

"My mother says this is a woman's fate. Everybody goes through and I should learn to manage as well. She even says it is easier for me because ours is a smaller family, so I need to adjust and make time to manage everything. She says that it is my responsibility to take care of my family and my children and suggests I accept it and try to make everybody happy." - IDI017

One woman reported that parents-in-law overstepped personal boundaries leading to discomfort. The inability to communicate the concern over lost privacy led to constant stress impacting the relationship with the mother-in-law.

"After my son was born, my mother-in-law insisted she sleep with me. We (husband and wife) used to co-sleep with my son and my mother-in-law slept on the floor. Then I felt awkward. I did not know how she would react to her son helping me. So, I did not even share when my body ached. It would be unbearable sometimes and I would just cry inside the blanket. I wished she would understand and give us some privacy. She could come to me if I needed but did not have to sleep on our floor. I didn't know what to say and whom to share it with. Sometimes, I felt like they would hear me cry so I went outside or to the toilet and cried." - IDI017

Furthermore, a lack of communication and understanding among family members can contribute to feelings of frustration and anger, leading to conflicts and strained relationships. The mother may feel unsupported and unappreciated, contributing to a sense of hopelessness and sadness. Another participant shared how her in-laws would treat her differently in the presence and absence of her spouse, making it difficult to communicate about the issues with him.

"My husband only got 15 days of leave and went to work after that. My husband helped me to go to the bathroom when he was at home but after that only my in-laws were present. I was sitting in my room and the kitchen was only a stair away from that room. If I had to go to the bathroom I had to go alone. They only brought me food from time to time. I was sleeping in a low bed, so it was hard getting up from that bed and also my baby cried from time to time, but no one was there for me. I had a very difficult time managing with all this. My in-laws only came to me when it was time for my husband to return home from the office. They showed care to me only in front of my husband, so I was very sad at that time." – IDI021

Some women did not communicate well with the parents-in-law because they feared judgment and escalation of issues into big fights. Upon asking why they felt that way, many said they did not know, or it didn't matter to them because parents-in-law were like strangers they had to live with.

"I do not share anything with my mother-in-law. I think about what she will think about me or how she will take it. I don't feel comfortable sharing my feelings with her. I don't know how to present my opinion and how she will perceive or react to what I say. That's why I keep things to myself. - IDI006

On the contrary, they did not communicate their problems with their parents because they did not want to worry or burden them. Some women also feared that the blame of extant problems would fall onto them.

> *"If I share it with my mother, she will blame everything on me and start giving advice. I can get scolded and also get embarrassed." - IDI009*
>
> *"Because if I tell my mother about my difficulty, she will get a lot of tension. If it is a small issue though, I tell my mother otherwise I tell my husband" - IDI014*

On the other hand, effective communication and boundary-setting can promote confidence and support in the parenting role, potentially reducing the risk of depression and anxiety. For example, a participant said the following when asked how conflicts and unmet expectations affect her.

> *"I feel like we should talk and try to solve our conflict. So, what happens in this case is older people do not know many things such as what to eat and what not to eat during pregnancy. Back then during pregnancy people worked in fields and in the afternoon, they ate whatever food was brought to them… but things are different now. So, when I tell her, she is surprised. She says, "Oh, is it? I did not know." So, they don't have knowledge about such things. It might be also because they did not have much knowledge back then. Whatever was available they ate it. But now she says, "I just got to know it today". She tries to understand new ways and learn about these things." – IDI005*

Theme 7: Working new mothers assumed added responsibility of managing household chores while caring for newborn.

Women who continue to work after giving birth can face additional challenges in managing responsibilities. They are often juggling the demands of a new baby with work and household responsibilities. Additionally, leaving a new baby behind can cause emotional stress and anxiety.

Women who work long hours, have inflexible work schedules, or experience job strain or dissatisfaction are more likely to experience distress.

"Even if I don't feel well in the morning I cook food, eat, and make food for everyone then go to my office. I leave my workplace at 6 pm in the evening. When I reach home from work it's almost 8 at night. At that time as well, dinner wouldn't be made. So, I used to find it very difficult to cook food at that time. I always used to be in an angry mood. There's so much stress in the office as well and to come and cook dinner at home is very difficult." – IDI0018

One of the participants who worked full-time shared how the elder generation who have worked in offices themselves are in a better position to understand the plight of new mothers and are better situated to provide support.

"If there is someone working or going to the office in the family, they might understand but otherwise it is very difficult. In my case my father in-law understood a little bit, but my mother in-law couldn't because she never went to work. Also, she was not very educated so they both reacted differently to my situation. Education plays a very important role. Also, when you go to work you meet different people including female coworkers so they can understand but my mother-in-law cannot understand that." – IDI021

Women who did not work and those who had to leave their job due to pregnancy felt they were sabotaging their career with a child. Women who aspired to but are not working had a feeling that the pregnancy stalled their career. In some instances, women who did not work were treated as freeloaders and had to deal with cold shoulders and mean comments from their in-laws.

"It did not bother me at first. But now I feel like my decision to marry was a wrong one. I know it doesn't sound right, but I feel like my marriage and then this pregnancy stalled my career. I should have taken time and focused on my career first. If I had given this a thought, I would have gotten the job before marrying. I was always interested in pursuing a career in finance, but I married young and soon got pregnant, so could not pursue these things Now my time has passed, I won't be able to make it." - IDI017

Possible protective factors against perinatal depression in intergenerational households

Theme 8: Perinatal women felt supported when elder generations shared experiences and were open to change.

Women reported feeling loved and cared for when members of the elder generation - mothers and mothers-in-law - shared their experiences of pregnancy and childbirth and taught them about different practices.

"The mother needs more care during her "Sutkeri" (postpartum) period and for the six months prior to her delivery. She shouldn't be allowed to work, especially lifting heavy objects. Her diet needs to be taken care of and she should be protected from cold. My family understands things like this." - IDI008

Some women shared how the elder generation grew up in a different context and are unknown to many modern-day practices. While some people are stuck in their ways, women appreciate that their parents and parents-in-laws are making an effort to change and adapt. It is easier when the elder generation is open to new ideas and practices. Women reported feeling heard when their mothers and mothers-in-laws listened to them and allowed them to do as they pleased.

One of the participants shared how her mother accompanied her in her doctor visitations allowing better understanding on her part.

"She says it's your choice. If you don't want it, it is okay. She says that she would not insist if the hospital says not to do so. My mother says that in the past, there were a lot of women who never visited the hospital during pregnancy. There are many women who have raised their children without a single vaccine and those children have turned out fine. [...] But my mother accompanies me to the hospital and is there for all of my doctor's appointments. I think that a person who frequently visits a hospital is more understanding." - IDI011

Women reported increased respect towards the elder generation when they shared their experiences and challenges hinting at how positive an experience this is.

"It's not like they tell us to do the things that they did but they do share experiences of their times about how they used to take care of a child. They talk about the difficulties they faced and how there were no hospitals, and my mother-in-law gave birth to her sons in the house only. Obviously, life back then was difficult. Both my mother and mother-in-law share about how they had to do difficult work like carrying heavy things like cement sacks even until their pregnancy. They have faced a lot of difficulties, so they are supportive of us so that we don't have to face such problems. They say it must be a lot easier to give birth now in the hospitals. [...] My in-laws are very supportive. My father-in-law doesn't talk much but he is very understanding even though he is not much educated. He gives good suggestions on what to do and what not to do." - IDI008

Theme 9: Spousal presence and support helped perinatal women to cope with challenges with the elder generation.

Most women reported that their husbands were the strongest support they had in their marital home, and they would share their problems and concerns with their husbands. Spousal support is important in the marital home as it can bridge the differences between the daughter-in-law and parents-in-law. Women reported that their husbands would support them by being a messenger to the parents-in-law and communicating issues with them, standing up for the women and making their life easier. Some husbands also shared household responsibilities to support the women during pregnancy and after childbirth. On the other hand, the husbands also corrected them when they were in the wrong.

My husband supports me, and my parents-in-law also listen to their son. They are okay with what he says or wants. I communicate with them through my husband. For example, if I want to go to my parent's house, I do not ask my parents-in-law. I request my husband and he tell them that I am going in the evening or something. When he says so, they cannot deny. - IDI011

However, some women reported that the husbands were supportive only to a certain extent. For example, this excerpt shows how husband's behavior is also influenced by the presence of their parents.

"My mother-in-law puts on a sad face when my husband helps me. She would get all grumpy and say that she raised her son without him having to do anything but now I am making him do these chores he was never meant to do. She treats household work as if no man should touch it." - IDI022

Women whose husbands are away for work reported additional difficulties living with the parents-in-law during pregnancy and after childbirth. They faced comments suggesting they would elope and were not cared for much by the parents-in-law.

Theme 10: Perinatal women preferred to live with the older generation citing better care and support for their children.

Despite all hardships, good and bad experiences living with the elder generation, all participating women chose living in joint families where their children can be exposed to their grandparents. Some of the reasons they presented were support with childcare, better socialization for children, culture sharing, experience of the elder generation, etc.

"I think it is good to raise children in a joint family. I don't feel alone here. Say, I can rely on them to take care of the babies when I am cooking or doing other things in the house. Otherwise, it would be difficult. I would have to constantly juggle between handling the babies and completing

my chores. I can eat in peace and rest sometimes. I like living in a joint family and would suggest others as well." - IDI006

"It is easier to raise a child in a joint family. Even if the elder generation do not help you with household chores, they will take care of their grandchild. I can concentrate on my work that way. It is because my parents-in-law are with us, we can leave our child behind and go to the office. Otherwise, for example they have not been around for some time now, and I take my child with me to the office." - IDI017

Theme 11: Attitude towards stressors and coping mechanisms played a role in influencing their mental state.

Participating women had different mechanisms to deal with the stressors not only during pregnancy and in the postpartum phase but also in general. Most of the women preferred to suppress their emotions and remain silent while some resorted to open communication of issues with relevant members of the family or sharing with close friends and spouse. Some women distract themselves with social media such as Facebook, YouTube and TikTok. But start thinking about the issue as soon as they are off those platforms. They overthink small things and are constantly stressed. These women have higher scores on the PHQ-9.

"When I am very stressed, I do not prefer to talk. I just stay silent. When I am silent many thoughts come to my mind that's why I listen to instrumental music and try to keep myself calm. I practice these things. I share it slowly when the situation is less stressful. I share it with my friends, but I don't share it with my mother because if I am stressed, she also gets stressed." - IDI021

"Rather than sharing with somebody, I used to watch television and use my mobile phone. And sometimes I used to visit my friends during that time." - IDI020

Women with lower scores on the PHQ-9 were mostly the ones who opted for open communication. They did not let the stressors get to them and looked at each problem through a positive outlook.

"I don't have the habit of taking things from my heart. If something happens, I sort it out at the moment. If someone says something I feel like let it be people keep saying things. I keep doing what I like. I say to myself if the outcome is good that's all that matters and ignore everything else. "- IDI018

DISCUSSION

This study set out to explore the intersection of perinatal depressive symptoms and intergenerational coresidence by analyzing the relationship dynamics between perinatal women and the elder members of the family living in the same household. The findings also suggest potential contextual risk and protective factors that can contribute to these symptoms emerging.

Social and cultural values of harmony, filial piety and a patriarchal structure of Nepali society set the stage for the significant roles of elder generations to potentially impact the emergence of perinatal depressive symptoms. Women reside in the husband's home, usually with the parents-in-law, after marriage and are expected to be respectful and obedient to this new family.[1,9,12] Consequently, findings of this study reflect on the poor relationship of many women with their parents-in-law, especially mother-in-law, evidenced in the various accounts of differential treatment, expectation of subordination, an increased assumed responsibility towards the new family, lack of autonomy and lack of appreciation - all influencing women's relationship to their in-laws. These findings align with previous studies that have shown women experiencing acculturative stress as they adapt to new customs and practices after marriage and childbirth.[1,9] These interpersonal dynamics potentially affect women at an individual level - instilling a sense

of restriction, low self-esteem, fear of consequences, fear of judgment, etc. – leading to stress that potentially increase their vulnerability to family tensions and trigger depressive symptoms even before pregnancy.

Regarding the care and support during pregnancy and after childbirth, the findings demonstrated women feeling drawn towards their parents for support given their willingness to prioritize their daughters' health over other things. This finding aligns with previous studies that indicate women's preference to live with their parents over parents-in-law.[7,9] There were a few accounts where mothers took responsibility to care for the postpartum women - in the hospital and even in the daughter's marital home. Many participants shared that they received no visits or inquiry by their parents-in-law during their hospitalization and cited these tendencies as signs of neglect. They did not feel supported enough by their parents-in-law, leading to feelings of neglect, worthlessness, and frustration. Given such context, having better relationships with own parents and an assumed better support is normal.

Women reported conflict with mothers-in-law as a major source of stress contributing to depressive symptoms. This is consistent with the findings of another study that concluded postnatal women recall receiving inadequate support, and enduring unkind comments and behavior from mothers-in-law and attribute this as a major stressor.[11] A significant part of such conflict included feeling pressured to conform to the traditional practices and beliefs held by the elder generation. This included advice on antenatal and postpartum care that conflicted with modern medical advice. Elder generations hold traditional beliefs about antenatal and postpartum

care - diet, environmental exposure, emotional state, activity restrictions, etc. - which are predominantly oral and have no scientific evidence.[12,13] These often clash with modern understandings of maternal and infant health among women of the newer generation, leading to confusion and misunderstanding. [9] Studies report women feeling compelled to accept the recommendations of the elder generation and their struggle to fight their frustration in silence.[12,13,16] The inability to take a stand and the constant interference from elders made some women feel inadequate, frustrated, and stressed. This finding is similar to those found in a recent study on the experience of women living in intergenerational housing where not only the parents, but the entire family is involved in childcare.[12] The interference of the older generation led to feelings of being inadequate and falling short in their duties reflecting on the low self-confidence in women regarding their ability to care for their children.

Approximately 85% participants of this study had more than a high school education which reflects their awareness and inclination to evidence-based or modern practices. Approximately 40% women were employed which reflects on their autonomy. There is a potential interplay of education and empowerment with adherence to cultural norms that lead to intergenerational conflict and, potentially, perinatal depression. A study on intergenerational coresidence and depressive symptoms in Chinese population concluded women of newer generations, with autonomous and liberal values, struggle to cope with expectations of subordination and enmeshment resulting in conflicts and stress.[13,14] The findings of this study

highlight how new mothers struggled to cope with incompatible value systems between the elder generation and themselves; and often performed their preferred practices in secrecy.

Another source of stress for perinatal women is the inadequate support from the elder generation, especially mothers-in-law, both emotionally and practically during the perinatal period. Women reported having to fulfill household responsibilities throughout their pregnancy and early on in their postpartum phase without much help from the elder generation. Working women felt an increased burden of care and responsibilities in the household with the introduction of a newborn. They did not feel appreciated for their contribution in the household and often received passive negative comments. A few women recall being sent to their natal homes towards the end of pregnancy and cited their inability to contribute to household chores and need for greater care as the reason. Women shared accounts where such behavior from the elder generations instilled feelings of neglect making women feel unwelcomed in their marital homes, leaving them with self-doubt about having been truly accepted as a family member.

Pregnancy and childbirth had significant effects on women's emotional and psychological wellbeing. Women reported being more sensitive towards their environment and especially their interaction with the elder generation. Some women experienced their body getting weaker and not being able to perform as much work as before childbirth. They associated this change with the constant fear of committing mistakes, judgment from the parents-in-law and potential negative consequences. They compared themselves with the biological daughters of

their marital home and the realization of the differential treatment and never being fully accepted as family affected them. Some women accepted this as the societal norm - fate of women.

Postpartum depression can affect how well a mother bonds with her baby, causing difficulties in forming a strong connection.[33,34] Some participants of this study experienced inability to bond with their baby and reported being reminded of the pain they had to go through to bear the child. They expressed not wanting to even look at their child. Some women had doubts about their decision of marriage and pregnancy - partly because of their household environment and partly because they felt that pregnancy adversely impacted their career prospect. In contrast, working women reported feelings of inadequacy and guilt for not being able to manage everything with their child around. Consistent exposure to such stressors in the household increased their risk of developing perinatal depressive symptoms.

One of the stark differences between women with higher PHQ-9 scores and that with lower PHQ-9 scores was in their ability to communicate expectations with the elder generation in the household and manage stress and conflict. The study reveals that attitudes towards stressors and coping mechanisms significantly influence perinatal women's mental well-being. Those who engage in open communication and maintain a positive outlook tend to have lower PHQ-9 scores.

More than half of the women reported experiencing conflicts and harboring resentment towards their parents-in-law due to ineffective communication, difficulties in adapting to a new life with a baby, and inadequate physical assistance with household chores. They reported repeated suppression of emotions, dissatisfaction and expectations or avoidance of conflict due

to an assumed need to comply with the societal norms and live in subordination. This lack of communication led to conflicts and strained relationships, leading to feelings of frustration, anger, isolation, and stress. Women reported crying and distracting themselves with activities in the household or social media when faced with conflict. On one hand, they could not talk back to their parents-in-law given the social norms and on the other, they could not share their sufferings with their parents because it would cause them stress. These findings were consistent with previous studies that indicated repeatedly suppressing emotions or avoiding conflict can lead to negative thoughts and hinder effective problem-solving, ultimately contributing to the development of depressive symptoms.[17]

Conversely, positive interactions and interventions, such as shared childcare and support, can assist new mothers in navigating the transition and meeting the evolving demands of pregnancy, thus preventing the onset of depressive symptoms.[17] Women who could effectively state their feelings and communicate expectations had lower PHQ-9 scores and displayed minimal or no signs of depressive symptoms. This study provides evidence that support from elder generations may have a positive/protective impact on perinatal depression. Support may involve sharing child-rearing responsibility, providing rest, care, special foods, and relieving women from household chores during the months after childbirth.[35] Elder generation sharing personal experiences and displaying a willingness to understand and adapt to newer ways contribute to a sense of love and care among women. This aligns with the family support theory that posits living with the elder generation ensures material, emotional and instrumental support.[17,18] Women cited such support as a reason for their preference to live in bigger families – shared childcare responsibilities and better social integration for the children.

Lastly, the presence and support of spouses played a crucial role in navigating challenges within the family for many women. The findings show that husbands act as advocates and messengers for their wives, even though they may encounter resistance from their parents.

LIMITATIONS

This study may not be generalizable to other districts of Nepal due to a limited sample from a singular setting. Perspectives were limited to the semi-rural community in Kavrepalanchok, which may not be representative of urban populations in bigger cities like Kathmandu. Despite these limitations, the results may still provide informative and nuanced insights for family relations influencing perinatal depression and interventions to address the same.

CONCLUSIONS AND RECOMMENDATION FOR FUTURE RESEARCH

This study uncovers the intricate dynamics between perinatal depressive symptoms and intergenerational coresidence, particularly focusing on the relationship between pregnant mothers or new mothers and their parents/parents-in-law. The findings emphasize the significance of family context and support in understanding the influence of intergenerational living on the possible emergency of perinatal depressive symptoms highlighting the common sources of stress for perinatal women – including incompatible value systems, assumed and expected subordination, poor relationships, poor communication, and ineffective stress management/coping mechanisms. Additionally, the study also underscores the role of positive interactions and communications between the two generations and spousal support in possibly mitigating the risk of perinatal depression.

Overall, this study points at the need for culturally sensitive support systems and family-centered interventions that recognize and address the challenges faced by perinatal women in intergenerational households. It paints a picture of a small community in Kavrepalanchok district of Nepal. The study can be extended to study other communities in the future to establish the overall scenario and generate evidence to recommend incorporation of amental health component in perinatal care practices in the primary care settings; and advocate supportive environment that benefit perinatal women.

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APPENDICES

Appendix I: Nepali patient health questionnaire, PHQ-9

Nepal Depression Screening p. 1

प्राथमिक स्याहारमा उदासिनता पत्ता लगाउनकालागीप्रयोग गर्ने प्रश्नावली -नेपाल
Nepal Primary Care Depression Screening[1]

Introduction

अब हामी तपाईंलाई गएको २ हप्तामा एक दुई दिनमात्रै नभएर लगातार धेरै दिनसम्म मन दुःखी भईरहने, खिन्न लागि रहने वा नरमाईलो लागिरहने भएको थियो कि थिएन भन्ने वारेमा कुरा गर्छौं । Now we will be talking about your experience during the past two weeks where you have been continuously feeling, not only for a couple of days but continuously, sad in your heart-mind and unhappy.

Step 1. Heart-mind problem screening

तपाईलाई विगतको २ हप्तामा मनसँग सम्बन्धित कुनै समस्याहरु आएको थियो? जस्तै मनमा कुरा खेली रहने, मन दुखी भईरहने अथवा मनमा चिन्ता लागी रहने ? Have you had heart-mind problems in the past two weeks, for example thoughts playing in your heart-mind, sadness in your heart-mind, or worry in your heart-mind?

थियो Yes	थिएन No

यदी उत्तरदाताले प्रश्न नं १ मा थियो भन्ने उत्तर दिएमा दोस्रो चरणमा जानुहोस If the respondent answers yes to Question #1, proceed to step #2:

Step 2. Impairment due to heart-mind problem

गएको २ हप्तामा भर्खरै हामीले कुरा गरेको मन सँग सम्बन्धित समस्याहरुको कारणले तपाईलाई आफ्नो काम, आफ्नो साथै घरपरिवारको हेरचाह र अरू मानिसहरूसँगको तपाईको सम्बन्धमा कत्तिका असर पारेको थियो? During the past two weeks, have you experienced problems in your work, taking care of yourself and your family, or in your relationship with other people because of the problems that we talked about heart-mind problems?

थियो Yes	थिएन No

यदी उत्तरदाताले प्रश्न नं ३ माथि थियो भन्यो भने, तेस्रो चरणमा अघि बढनुहोस । If the respondent answers yes to Question #3, proceed to step #3:

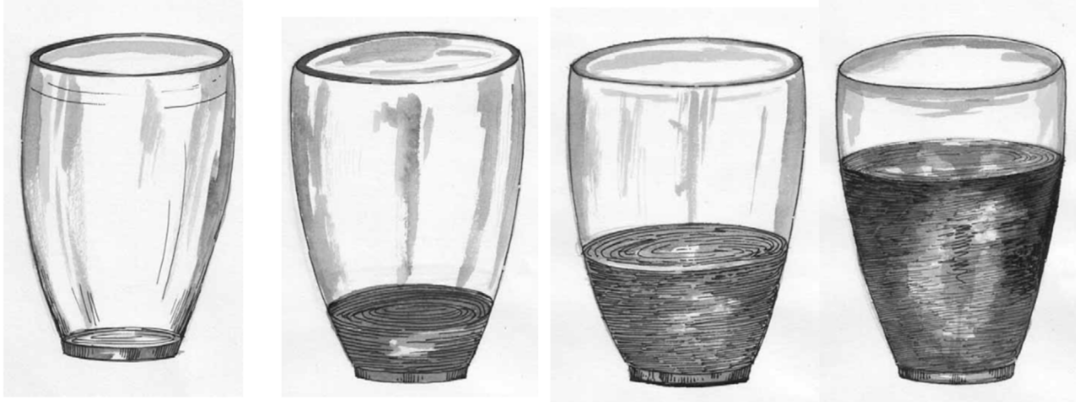
[1] For additional information on administration and psychometric properties of this tool, please contact **Nagendra Luitel**, Research Department, Transcultural Psychosocial Organization Nepal, Kathmandu, Nepal, luitelnp@gmail.com. This tool was adapted and validated through the **Programme for Improving Mental Health Care (PRIME)** Research Consortiumwww.prime.uct.ac.za, funded by UK aid from the UK Government, however theviews expressed do not necessarily reflect the UK Government's official policies. The PHQ-9 was developed by Drs Robert L. Spitzer, Janet B.W. Williams, and Kurt Kroenke.

Step 3. Patient Health Questionnaire (PHQ-9)

	Nepali questions with English back-translation	कत्ति पनि भएन Not at all	कहिलेकाहीं भयो Sometimes	धेरै जसो भयो Usually	सधै जसो भयो Always
१.	गएको २ हप्तामा तपाईं अन्य व्यक्तिहरू जति रमाउँछन्, त्यत्तिको रमाउन नसक्ने/खुसीहुन नसक्ने वा काम गर्न मन नलाग्ने कत्तिको भएको थियो ? During the past two weeks, compared to other people, how much have felt that you are not able to be happy or do not enjoy doing work/activities?	०	१	२	३
२.	गएको २ हप्तामा तपाईलाई, दिक्क लाग्ने, निरास हुने वा केहीगर्न सक्दिन जस्तो लाग्ने कत्तिको भएको थियो ? During the past two weeks, how much have you felt frustrated, despairing,orincapable of doing anything?	०	१	२	३
३.	गएको २ हप्तामा तपाईं राम्ररी सुत्न नसक्ने वा निन्द्रा मस्त नआउने वा अघिपछि भन्दा धेरै सुत्ने वा धेरै निन्द्रा लाग्ने कत्तिको भएको थियो ? During the past two weeks, how much have you had problems with your sleep, such as not being able to sleep properly and peacefully, or feeling sleepier than before?	०	१	२	३
४.	गएको २ हप्तामा तपाईंलाई थकान महशुस हुने, शक्ति वा तागत् कम हुने कत्तिको महशुस भएको थियो ? During the past two weeks, how much have you felt tired and lacking energy?	०	१	२	३
५.	गएको २ हप्तामा तपाईंलाई खानाखान मन नलाग्ने वा रुचि नहुने वा अघिपछि भन्दा धेरै खान मन लाग्ने कत्तिको भएको थियो ? During the past two weeks, how much have you lost your appetite or experienced increased appetite?	०	१	२	३
६.	गएको २ हप्तामा तपाईं आफूले आफूलाई दोषी ठान्ने वा आफ्नो कारणले गर्दा आफू असफल भएको वा परिवार तल परेको कत्तिको महशुस गर्नु भएको थियो ? (जस्तै:आफ्नो कारणले गर्दा समुदायमा आफ्नो तथा आफ्नो परिवारको ईज्जत गुमेको महशुस गर्ने) During the past two weeks, how much have you blamed yourself for something or felt that you have let you and your family down? (For example, because of you, you and your family have lost respect in the society.)	०	१	२	३
७.	गएको २ हप्तामा तपाईंलाई ध्यान केन्द्रित गर्न वा एक चित्त हुन वा एक सुरले काम गर्न गाह्रो हुने कत्तिको भएको थियो ?(जस्तै: पत्रपत्रिका पढ्न वा टी.भी. हेर्न, चामल केलाउन, पात गाँस्न, तरकारी पकाउन, घाँस काट्न, ध्यान दिएर कुनै पनि काम गर्न आदि) During the past two weeks, how much have you been having difficulty being able to focus or concentrate? (For example, not being able to concentrate while watching TV, reading newspaper, cleaning rice, cooking, cutting grass, or working.)	०	१	२	३
८.	गएको २ हप्तामा अरू व्यक्तिले पनि याद गर्ने गरी तपाईं बिस्तारै बोल्ने वाहिड्ने गर्नुभएको अथवा छट्पट्टीभएर चाहिने भन्दा बढी हिंडडुल गर्ने कत्तिको गर्नुभएको थियो ? During the past two weeks, how much have people commented that you have been talking very softly, walking slowly, moving around needlessly, or acting restless?	०	१	२	३
९.	गएको २ हप्तामातपाईंलाई मरौं मरौं जस्तो लाग्ने, आफ्नो ज्यान आफैं लिने वा आत्महत्या गर्ने खालका विचारहरू कत्तिको आयो ? (जस्तै: हातकाट्ने, विष सेवनगर्ने, हामफाल्ने, भित्तामाटाउको ठोक्काउने आदि) During the past two weeks, how much have you had the feeling of hurting yourself, dying, or commiting suicide? (For example, cutting your hands, taking poison, jumping from somewhere, hitting your head against the wall.)	०	१	२	३

जम्मा अङ्क [Total Score, PHQ-9, #1-9]: __________

Water Glasses Pictorial Response Scale



कत्ति पनि भएन Not at all	कहिलेकाहीं भयो Sometimes	धेरै जसो भयो Usually	सधै जसो भयो Always
०	१	२	३

Appendix II: Interview guide

These are guides only. Interviewer will use further prompts and probes in response to participants' responses. Interviewer to use own discretion to omit questions or alter wording as appropriate during interviews.

Introduction

This interview is a part of a research study being conducted by an MPH candidate at the University of Washington. The goal of this research is to study how relationship between family members of different generations and women who are pregnant or in their postpartum phase can affect the mental health of the women.

The information you will share will be used to understand how the relationship between family members of different generations within a household can affect women's mental health, especially the relation between the women, and their parents, and/or parents-in-law. We are interested in personal experiences and opinions. There are no right or wrong answers. During the interview, you may skip any questions you don't want to answer. To protect your identity, please avoid using your name or any other person's name who you know during the interview.

The interview will be audio-recorded and typed into a detailed transcript to make sure we fully capture the discussion. The written transcript will be kept confidential, not include your name, and will be used for research purposes only. Is it okay for me to start recording now?

(Start recording)

Your name will not be used in study reports or included in the transcript. If there are any comments you would like to share "off the record" we shall flag that in the notes and make sure not to include them in our reports. You can also contact us later if you would like to delete part or all the information before we publish any results of the study.

We will provide NPR 500 after the interview as a compensation for your time. This interview will take approximately 1 hour. Do you have any questions about the study that I can answer for you? Are you ready to begin the interview? Just as a heads up, in order to capture your perspectives most authentically, you may notice that I stay mostly quiet or ask you to say more rather than commenting on what you've said.

Icebreaker

We are going to start by getting to know you a little.

- Tell us about yourself and your family
- Favorite food/activity
- Hobbies
- I'd love to hear why you agreed to participate in this research study.

Now I'm going to go over a few definitions and background.

When we talk about family relations, we are mostly focused on relationship between you and the elder generation in your house. It can be both – your maternal home or the home you are married to.

Experiences around living in an intergenerational household.

- You have shared a little about your family. Can you tell me more about your experience living with your parents / parent-in-law? Your relationship with them.
- What would you say your role in the family is (individually)?
- Contrasting life in natal home with marital home.
- Changes in lifestyle and self after marriage
- What do you like about living in an intergenerational household?
- What do you wish were different?

Experiences during pregnancy and after childbirth

- We know pregnancy is a big change in any woman's life. Tell me about your pregnancy. How do you feel about becoming a mother. What has your journey been like?
- What kind of changes do you see yourself after being pregnant?

Pregnancy in intergenerational household

- We have found through some research that living with elder members of the family during pregnancy and early parenting can be challenging because of different preferences and practices. Would you say your choices and preferences around pregnancy and parenting are similar or different from your elders?
  - *If yes* → Can you tell me more about that? What types of challenges did you face?
  - *If no* → Can you share why? What has gone well in your experience?
- What happens when there is a disagreement? How do you communicate or deal with it?
- In your opinion, how important is it for grandparents to be involved in childcare?
- What type of help or support do you get from your elders with pregnancy or parenting?
- What type of support would you appreciate from your elders?

Pregnancy and mental health

- Feeling sad, stressed or overwhelmed is common during pregnancy and after childbirth. This is a vulnerable time where you go through many changes. We are trying to learn more about these feelings in order to improve care to patients experiencing such emotions.
  - Have your ever had these feelings in relation to your pregnancy?
  - How long have you felt that way? What are the common causes for such feelings?
  - Do you talk about such feelings with your spouse or other family members?
- Recently, have there been times when you feel a positive sense of well-being? If so, what are you feeling? What are you thinking? What are you doing to make this happen?
- What do you think would help pregnant and postpartum women be more supported during these times?

Lastly, is there anything I haven't asked about in relation to the topic that you think would be important for us to hear?