

Pregnancy Myths and Health Behavior Among Women Facing Stunting Risk in Samarinda, Indonesia

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Abstract

Purpose: This study aimed to explore the meaning of pregnancy myths and how they contribute to the oscillation of health behaviors among pregnant women in the context of stunting risk in Samarinda, Indonesia.

Methodology: A qualitative study using a phenomenological approach was conducted with 278 pregnant women from two sub-districts with the highest prevalence of stunting, Loa Janan Ilir and Loa Bakung, with data collected over three months through in-depth interviews at five primary healthcare centers and analyzed using Colaizzi's method to identify significant statements, formulate meanings, and develop thematic structures.

Results: Pregnancy myths function as behavioral regulators, particularly through restrictions on sleep, including prohibitions against frequent sleeping, morning sleep, and daytime naps, and dietary practices, including avoidance of banana blossom, squid, octopus, and cold beverages, and these beliefs contribute to an oscillation of health behaviors characterized by irregular sleep patterns and inconsistent dietary intake.

Conclusions: Pregnancy myths contribute to the emergence of oscillating health behaviors among pregnant women, which may increase the risk of stunting, and culturally sensitive health interventions are needed to bridge traditional beliefs with evidence-based maternal health practices.

Limitations: The cross-sectional, self-reported design cannot establish causal links to measured nutritional or growth outcomes, and findings from two sub-districts may not transfer directly to other sociocultural settings.

Contributions: The study introduces health behavior oscillation as a novel conceptual pathway linking cultural belief systems to maternal health practices and stunting risk.

Keywords: *Dietary Pattern, Health Behavior Oscillation, Pregnancy Myths, Pregnant Women, Sleep Pattern*

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1. Introduction

Stunting remains a major global public health challenge, particularly in low and middle income countries, including Indonesia. Beyond impaired linear growth, stunting is associated with long term consequences such as reduced cognitive development, increased susceptibility to infections, and decreased productivity in adulthood ([Agushybana, Pratiwi, Kurnia, Nandini, Santoso, & Setyo, 2022](#); [Has, Krisnana, & Efendi, 2024](#)). In Indonesia, reducing stunting prevalence has become a national

priority, and the burden remains high across several regions, including Samarinda, East Kalimantan. Recent national analyses continue to document substantial geographic and socioeconomic disparity in child undernutrition across hundreds of districts, underscoring that stunting reduction cannot rely on a single uniform strategy applied irrespective of local context ([Ayuningtyas, Hapsari, Rachmalina, Amir, Rachmawati, & Kusuma, 2022](#); [Widyaningsih, Mulyaningsih, Rahmawati, & Adhitya, 2022](#)).

The development of stunting is influenced by a complex interplay of factors, especially during the first one thousand days of life. Maternal nutritional status during pregnancy, dietary quality, and overall maternal health play a crucial role in determining fetal growth and child development outcomes ([Alfarisi, Nurmalasari, & Nabilla, 2019](#)). Micronutrient deficiencies during this critical window remain closely tied to the socioeconomic circumstances of the household, further compounding the vulnerability of children born into already disadvantaged communities ([Ernawati, Syaury, Arifin, Soekatri, & Sandjaja, 2021](#)). However, sociocultural determinants are often underexplored, despite their significant influence on maternal health behaviors. Previous studies have shown that traditional beliefs and cultural practices, including pregnancy related myths, continue to guide decision making processes among pregnant women in various communities ([Cukarso, & Herbawani, 2020](#); [Felisian, Mushy, Tarimo, & Kibusi, 2023](#)).

Pregnancy myths typically manifest as food taboos or behavioral restrictions passed down across generations. Although these beliefs are not always supported by scientific evidence, they are often adhered to due to social pressure and fear of negative consequences for the fetus ([Aynalem, Melesse, & Bitewa, 2023](#); [Ramulondi, & Ntuli, 2021](#)). A recent cross cultural meta-analysis of food taboos during pregnancy suggests that such restrictions follow patterned, diet related pressures that vary systematically with subsistence style and are not simply random cultural residue, indicating that these beliefs are deeply embedded in the logic of particular communities rather than being incidental superstition ([Maggiulli, Rufo, Johns, & Wells, 2022](#)). In the Indonesian context, cultural rituals and traditional practices during pregnancy have also been documented as influential factors shaping maternal behavior, from the Javanese Tingkeban ceremony marking the seventh month of pregnancy to broader community narratives about what a pregnant woman must and must not do ([Austiyana, 2021](#); [Yulianti, 2024](#); [Zulkifli, Yenni, Sari, Rachel, & Sasihade, 2023](#)).

One aspect that has received limited attention is how these myths affect the regularity and stability of health behaviors, particularly sleep and dietary patterns. From a biological perspective, pregnancy requires stable physiological conditions, including adequate sleep duration and balanced nutritional intake. Disruptions in sleep, such as insufficient duration or irregular circadian rhythms, have been associated with adverse pregnancy outcomes, including low birth weight and preterm birth ([Murata, Kyozyuka, Fukuda, Yasuda, Yamaguchi, Morokuma, Sato, Ogata, Shinoki, Hosoya, Yasumura, Hashimoto, Nishigori, Fujimori, Kamijima, Yamazaki, Ohya, Kishi, Yaegashi, & Katoh, 2021](#); [Wang, Xu, Yang, Xie, Yang, Shang, Zhang, Guo, Yue, Zeng, & Chung, 2022](#); [Wang, & Jin, 2020](#)). Similarly, dietary restrictions without scientific basis may lead to nutritional deficiencies, which are key contributors to chronic undernutrition and stunting ([Agushyana et al., 2022](#)).

Despite growing recognition of the role of maternal nutrition and prenatal health in preventing stunting, limited attention has been directed toward understanding how culturally embedded beliefs shape the consistency of health-related behaviors during pregnancy. Recent studies suggest that maternal health behavior is not solely determined by knowledge or access to healthcare services but is also influenced by social norms, family expectations, and cultural perceptions regarding pregnancy and fetal wellbeing ([Alemu, Kassa, Zeleke, & Yitayew, 2021](#); [Zerfu, Umeta, & Baye, 2022](#)). Evidence from several low- and middle-income countries indicates that culturally driven food avoidance practices may reduce dietary diversity and micronutrient intake among pregnant women, thereby increasing the risk of adverse maternal and child health outcomes ([Diddana, Kelkay, Dola, & Sadore, 2021](#)). Furthermore, maternal adherence to traditional beliefs has been associated with inconsistent utilization of antenatal care services and fluctuations in recommended health behaviors, particularly when advice from healthcare professionals conflicts with community norms ([Aziato, Ohemeng, & Omenyo, 2023](#)). Research has also shown that psychosocial pressures arising from cultural

expectations can influence sleep quality, stress levels, and daily routines during pregnancy, all of which contribute to maternal and fetal health status ([Tomfohr-Madsen, Racine, Giesbrecht, Lebel, & Madigan, 2021](#)). Collectively, these findings highlight the need to explore pregnancy myths not merely as isolated cultural beliefs but as social mechanisms that may contribute to oscillations in maternal health behavior, thereby influencing conditions associated with stunting risk in vulnerable populations such as pregnant women in Samarinda.

In this context, the concept of health behavior oscillation emerges as a relevant analytical lens. It refers to fluctuating and inconsistent health behaviors that do not align with physiological needs. Such oscillations may arise from the tension between traditional beliefs and modern health knowledge. For example, restrictions on sleep may lead to inadequate rest, while food taboos may limit essential nutrient intake. These inconsistencies can compromise maternal health and fetal development. In Samarinda, particularly in sub-districts with high stunting prevalence such as Loa Janan Ilir and Loa Bakung, pregnancy related myths remain prevalent in daily life. However, there is limited research exploring how these beliefs are experienced and interpreted by pregnant women, and how they shape everyday health behaviors.

Therefore, this study aims to explore the lived experiences and meanings of pregnancy myths and how they contribute to the oscillation of health behaviors among pregnant women, particularly in relation to sleep and dietary patterns, within the context of stunting risk in Samarinda. By employing a phenomenological approach, this study seeks to provide a deeper understanding of the interaction between cultural beliefs and maternal health behaviors, and to inform the development of culturally sensitive interventions.

2. Literature Review

2.1 Cultural Beliefs as Determinants of Maternal Behavior

Cultural beliefs act as strong determinants of maternal practices across many settings. In Javanese communities, systematic reviews document persistent traditional beliefs and prenatal care practices that continue to shape decision making among pregnant women even where formal antenatal care is readily accessible ([Cukarso & Herbawani, 2020](#)). Firsthand accounts of Javanese women during their first pregnancy similarly describe how cultural expectations regarding conduct, diet, and rest are transmitted through family elders and reinforced through social observation rather than through formal instruction ([Gayatri et al., 2023](#)). Comparable patterns have been documented outside Indonesia. Qualitative research among indigenous pastoralist women in Manyara, Tanzania identifies a dense web of sociocultural practices and beliefs spanning pregnancy, childbirth, and the postpartum period, many of which function as informal behavioral codes rather than as isolated superstitions ([Felisian et al., 2023](#)). Similarly, qualitative work in Northwest Ethiopia documents cultural beliefs and traditional practices that govern permissible conduct throughout pregnancy, childbirth, and the postpartum period, reinforcing the cross cultural generality of myth driven behavioral regulation during this life stage ([Aynalem et al., 2023](#)).

2.2 Sleep Disruption and Maternal and Fetal Health

Adequate sleep during pregnancy is increasingly recognized as a determinant of maternal and fetal wellbeing rather than a matter of personal comfort alone. A large scale study drawing on the Japan Environment and Children's Study found that maternal sleep duration is measurably associated with neonatal birth weight, with shorter maternal sleep linked to lower birth weight outcomes ([Murata, Kyojuka, Fukuda, & Katoh, 2021](#)). Systematic review and meta-analytic evidence similarly links shorter or lower quality maternal sleep during pregnancy to an elevated risk of preterm birth by [Wang and Jin \(2020\)](#), while a broader systematic review and meta-analysis of maternal sleep during pregnancy identifies associations between disrupted sleep and a range of adverse pregnancy outcomes beyond birth weight alone, including metabolic disturbances ([Wang, Xu, Yang, Xie, Yang, Shang, Zhang, Guo, Yue, Zeng, & Chung, 2022](#)). Complementary evidence from a large cohort study in China finds that afternoon napping patterns during pregnancy are themselves associated with birth weight outcomes, suggesting that both insufficient sleep and certain patterns of daytime rest carry physiological significance ([Song, Shen, Li, Liu, Zheng, Zhang, Xu, & Wang, 2018](#)). Survey based

research in the United States further documents that sleep duration and circadian chronotype vary considerably among pregnant women and are shaped by a range of social and behavioral factors, indicating that sleep during pregnancy is not solely determined by biological need but is also responsive to social context ([Cassidy, Bailey, Napolitano, & Vyas, 2023](#); [Karami, Chaleshgar, Salari, Akbari, & Mohammadi, 2022](#)). Taken together, this literature provides a strong physiological rationale for treating sleep restricting pregnancy myths, such as prohibitions on frequent sleep, morning sleep, and daytime naps, as a plausible behavioral pathway toward adverse maternal and fetal outcomes rather than as a culturally neutral practice.

2.3 Food Taboos and Nutritional Consequences

Food related taboos during pregnancy have been documented extensively across diverse cultural settings, with converging evidence that such restrictions frequently target protein rich and nutrient dense foods. A cross cultural meta-analysis finds that food taboos during pregnancy follow identifiable, diet related patterns linked to subsistence style, rather than being randomly distributed across cultures, indicating a structured rather than incidental relationship between culture and dietary restriction ([Maggiulli, Rufo, Johns, & Wells, 2022](#)). Qualitative research among Zulu women in northern KwaZulu-Natal documents a range of traditional food taboos and practices spanning pregnancy, postpartum recovery, and infant care, several of which restrict access to protein and micronutrient sources in ways that plausibly compound existing nutritional vulnerability ([Ramulondi, & Ntuli, 2021](#); [Mongi, 2022](#)). A systematic review of food taboos and their perceived underlying reasons among pregnant women in Ethiopia similarly finds that such taboos are typically justified through beliefs about fetal harm, difficult labor, or infant deformity, beliefs that are emotionally compelling to the women who hold them even though they lack empirical support ([Gebregziabher, Kahsay, Gebrearegay, Berhe, Gebremariam, & Gebretsadik, 2023](#)). Cross sectional survey evidence from antenatal care settings further quantifies the prevalence of such taboo adherence and its association with sociodemographic factors, reinforcing that food taboo practice is a measurable and consequential phenomenon rather than an anecdotal curiosity ([Abera & Azene, 2023](#)). Within the Indonesian maternal health literature specifically, maternal nutritional status during pregnancy is repeatedly identified as a proximate determinant of stunting in the resulting child, providing the direct link between culturally driven dietary restriction and the stunting outcome that motivates the present study ([Alfarisi, Nurmalasari, & Nabilla, 2019](#); [Agushybana, Pratiwi, Kurnia, Nandini, Santoso, & Setyo, 2022](#)).

2.4 Health Behavior Oscillation as an Emerging Analytical Concept

Existing literature on pregnancy myths tends to treat cultural belief adherence as a relatively stable, binary condition, in which a woman either follows traditional practices or follows biomedical guidance. This framing does not adequately capture situations in which a woman's behavior shifts inconsistently between the two systems depending on context, mood, social pressure, or the presence of family members ([Regina & Noviani, 2023](#)). The concept of health behavior oscillation is introduced in this study to describe precisely this pattern, in which sleep and dietary behaviors fluctuate between what physiological need would dictate and what cultural expectation demands, producing a net pattern of behavior that is neither fully traditional nor fully biomedical but unstable and context dependent. This concept builds on, but is distinct from, prior stunting determinant research that has focused on the presence or absence of harmful practices or knowledge gaps as the primary explanatory variables since oscillation locates the risk not in a fixed belief or a fixed knowledge deficit but in the instability of behavior itself ([Agushybana et al., 2022](#); [Alfarisi et al., 2019](#)).

2.5 Research Propositions

Consistent with the exploratory, meaning centered purpose of phenomenological inquiry, this study is guided by interpretive propositions rather than statistical hypotheses to be tested for significance. These propositions orient the thematic analysis reported in the results section without predetermining its conclusions.

P1: Pregnancy myths function as informal behavioral regulators that pregnant women experience as socially binding rules governing sleep and dietary conduct, rather than as optional cultural preferences.

P2: Adherence to sleep restricting and food restricting pregnancy myths produces an oscillating rather than a stable pattern of health behavior, in which women move inconsistently between physiologically indicated conduct and culturally prescribed conduct.

P3: Not all pregnant women in the study setting adhere to pregnancy myths, and the coexistence of myth adhering and biomedically oriented subgroups within the same community constitutes an additional, community level source of behavioral variability relevant to stunting risk.

3. Research Methodology

3.1 Study Design

This study employed a qualitative research design with a phenomenological approach to explore the lived experiences and meanings of pregnancy related myths and their influence on maternal health behaviors. A phenomenological framework was chosen because it is well suited to capturing how pregnant women perceive, interpret, and integrate cultural beliefs into their daily practices, particularly regarding sleep and dietary patterns, in a manner that a purely quantitative survey instrument would not adequately reveal.

3.2 Study Setting and Period

The study was conducted in Samarinda, East Kalimantan, Indonesia, focusing on two sub-districts with the highest reported prevalence of stunting, namely Loa Janan Ilir and Loa Bakung within the Sungai Kunjang area. These areas were purposively selected based on local public health data indicating a high burden of stunting. Data collection took place over a three month period from August to October 2024 across five primary healthcare centers, comprising Loa Bakung, Wonorejo, and Karang Asam Primary Health Centers in the Loa Bakung area, and Harapan Baru Primary Health Center and the associated Trauma Center in the Loa Janan Ilir area. These facilities serve as the main antenatal care providers for pregnant women in the selected regions.

3.3 Participants and Sampling

A total of 278 pregnant women participated in this study. Participants were recruited using purposive sampling, targeting individuals who could provide rich and relevant information regarding pregnancy related beliefs and health behaviors. Inclusion criteria specified pregnant women at any gestational age who were attending antenatal care services at the selected health centers, residing in the study areas, and willing to participate and provide informed consent. Exclusion criteria specified pregnant women with severe medical or obstetric complications that limited communication, participants who were unwilling or unable to complete the interview process, and cases involving incomplete interview data or withdrawal during the study. Although the total number of participants was relatively large for a phenomenological study, the analysis focused on depth and richness of meaning, with particular attention to recurring patterns and thematic saturation across narratives rather than on statistical generalization from sample size alone.

3.4 Data Collection

Data were collected through in-depth, semi-structured interviews conducted by trained researchers. An interview guide was used to explore participants' experiences related to pregnancy myths, daily health behaviors, sleep patterns, and dietary practices. Interviews were conducted in a private setting within the health facilities to ensure confidentiality and comfort. Each interview lasted approximately thirty to sixty minutes and was conducted in the local language. With participants' consent, interviews were audio recorded and supplemented with field notes to capture non-verbal expressions and contextual details.

Various pregnancy related myths were identified during the interviews, including symbolic and behavioral beliefs. However, this study specifically focused on myths that were directly related to health behaviors with potential implications for stunting, comprising restrictions on sleep such as

avoiding frequent sleep, morning sleep, or daytime naps, food taboos such as avoidance of banana blossom, squid, and octopus, restrictions on cold beverage consumption, and avoidance of frequent ultrasound examinations.

3.5 Data Analysis

Data analysis was conducted using Colaizzi's seven step phenomenological method, comprising familiarization with the data through repeated reading of transcripts, identification of significant statements, formulation of meanings from these statements, organization of meanings into clusters of themes, development of an exhaustive description of the phenomenon, identification of the fundamental structure of the experience, and validation of findings through member checking with selected participants. All interviews were transcribed verbatim and analyzed systematically to ensure that the resulting themes accurately reflected participants' lived experiences. The concept of health behavior oscillation emerged inductively during this analytical process rather than being imposed on the data in advance.

To enhance transparency, the analytical process followed a structured flow, beginning with data collection, followed by transcription, coding, thematic development, and interpretation within the context of maternal health and stunting risk. To ensure the rigor of the study, four criteria were applied. Credibility was achieved through prolonged engagement, triangulation of responses, and member checking. Dependability was maintained through a clear audit trail of the research process. Confirmability was ensured by minimizing researcher bias and maintaining reflexivity. Transferability was supported by detailed descriptions of the study context and participants.

3.6 Ethical Considerations

Ethical principles were strictly observed throughout the study. Participants were informed about the purpose of the study, and written informed consent was obtained prior to data collection. Confidentiality and anonymity were maintained by using coded identifiers instead of personal information. Participation was voluntary, and respondents were free to withdraw at any stage without any consequences. This study was reviewed and approved by the Health Research Ethics Committee of the Faculty of Nursing, Universitas Airlangga, Surabaya, with ethical clearance certificate number 3133-KEPK, and all procedures were conducted in accordance with the Declaration of Helsinki and established ethical standards for research involving human subjects.

4. Results and Discussions

4.1 Overview of Findings

A total of 278 pregnant women participated in this study. Analysis of in-depth interviews revealed that pregnancy related myths remain influential in shaping daily health behaviors. From an initial pool of various myths identified, seven key myths directly related to health behaviors were selected and analyzed. Through Colaizzi's method, the analysis generated four major themes, comprising pregnancy myths as behavioral regulators, sleep restriction and disruption of circadian patterns, food taboos and nutritional imbalance, and oscillation of health behaviors.

Table 1. Coding process from participant statements to themes

Participant	Statement	Open Coding	Category	Theme
Ny. S, 20 years	"Pregnant women should not sleep too often"	Sleep restriction	Sleep behavior control	Sleep restriction
Ny. K, 26 years	"Morning sleep is not allowed"	Time based sleep restriction	Circadian disruption	Sleep restriction
Ny. H, 30 years	"Daytime naps are forbidden"	Limited rest	Reduced sleep duration	Sleep restriction
Ny. N, 22 years	"Eating banana blossom makes the baby small"	Food taboo	Nutritional restriction	Food taboos
Ny. W, 25 years	"Squid and octopus should be avoided"	Protein restriction	Limited nutrient intake	Food taboos

Participant	Statement	Open Coding	Category	Theme
Ny. T, 27 years	"Cold drinks are not allowed"	Beverage restriction	Hydration and nutrition limitation	Food taboos
Ny. R, 29 years	"Frequent ultrasound is harmful"	Healthcare avoidance	Reduced service utilization	Behavioral regulation

Table 1 presents seven illustrative participant statements drawn from the in-depth interviews, together with the open code, category, and theme assigned to each statement during Colaizzi's analytical process. The table shows that statements concerning sleep, diet, and healthcare utilization were consistently coded into three of the four major themes reported below, namely sleep restriction, food taboos, and behavioral regulation, with the fourth theme, oscillation of health behaviors, emerging as an overarching pattern that cut across the other three rather than being tied to a single category of statement.

4.2 Theme 1: Pregnancy Myths as Behavioral Regulators

Pregnancy myths were not merely beliefs but functioned as informal regulatory systems that guided daily behavior. Participants described these myths as rules that must be followed to avoid harm to the fetus. One participant explained that she follows what her parents say, because if she does not, something bad might happen to the baby. This indicates that myths operate within a framework of social control and intergenerational transmission, consistent with previous findings that cultural beliefs strongly influence maternal decision making ([Cukarso & Herbawani, 2020](#); [Felisian et al., 2023](#)). This finding provides direct support for Proposition 1, since participants consistently described myths not as optional preferences but as binding expectations enforced through family relationships.

4.3 Theme 2: Sleep Restriction and Circadian Disruption

A dominant finding was the restriction of sleep, including prohibitions against frequent sleep, morning sleep, and daytime naps. These restrictions resulted in reduced rest and irregular sleep patterns. One participant described trying not to sleep during the day even when feeling tired, because daytime sleep is not allowed. This reflects a form of behavioral suppression of physiological needs, potentially disrupting circadian rhythms. Scientific evidence suggests that inadequate sleep during pregnancy is associated with adverse outcomes such as low birth weight and metabolic disturbances and that maternal sleep quality more broadly is linked to preterm birth risk ([Murata, Kyojuka, Fukuda, & Katoh, 2021](#) ; [Wang, Xu, Yang, Xie, Yang, Shang, Zhang, Guo, Yue, Zeng, & Chung, 2022](#); [Wang et al., 2022](#)). Patterns of daytime napping specifically have also been linked to birth weight outcomes in large cohort research, lending further physiological weight to participants' reports that daytime napping restriction was a particularly salient and strictly enforced myth ([Song et al., 2018](#)).

4.4 Theme 3: Food Taboos and Nutritional Imbalance

Participants reported avoiding several foods due to cultural beliefs, including banana blossom, squid, octopus, and cold beverages. These restrictions often lacked scientific justification but were strictly followed. One participant explained that she avoids eating certain foods because she is afraid the baby will be affected. These findings highlight the risk of nutritional limitation, particularly regarding protein and micronutrient intake. Previous studies have shown that food taboos during pregnancy can lead to inadequate dietary intake and increased risk of maternal undernutrition ([Ramulondi, & Ntuli, 2021](#); [Aynalem, Melesse, & Bitewa, 2023](#)). A pattern that mirrors the diet related, protein focused taboo structure documented in the broader cross cultural meta-analytic literature by [Maggiulli, Rufo, Johns, and Wells \(2022\)](#) and in systematic reviews of the perceived reasons underlying such taboos elsewhere ([Gebregziabher, Kahsay, Gebrearegay, Berhe, Gebremariam, & Gebretsadik, 2023](#)).

4.5 Theme 4: Oscillation of Health Behaviors

The most significant finding was the emergence of oscillation in health behaviors, characterized by inconsistency and fluctuation between biological needs and cultural expectations. Participants often experienced internal conflict between modern health knowledge and traditional beliefs. One participant stated that although she sometimes knows something is acceptable medically, she still follows the tradition to feel safe. This oscillation reflects a dynamic tension between belief and

evidence, leading to unstable patterns in sleep and dietary behaviors ([Morales-Munoz, Partonen, Saarenpaa-Heikkila, Kylliainen, Polkki, Porkka-Heiskanen, Paunio, & Paavonen, 2019](#)). This finding provides direct support for Proposition 2, since the pattern described by participants is not a stable adherence to either physiological need or cultural expectation but a genuine fluctuation between the two depending on circumstance.

4.6 The Coexistence of Myth Adherence and Biomedical Orientation

It is important to note that not all participants reported the presence of pregnancy related myths in their daily lives. Among the 278 pregnant women interviewed, a substantial proportion indicated that they were not aware of or did not adhere to any specific pregnancy myths within their households or communities. In fact, responses denying the existence of such beliefs were more frequent than those affirming them. Several participants explicitly stated that they relied more on information obtained from healthcare providers rather than traditional beliefs. One participant reported that she does not really follow any myths and prefers to follow what the midwife or doctor says, while another explained that her family holds no specific taboos and simply follows medical advice ([Vionalita & Permata, 2020](#)).

This finding reflects an ongoing transition in health behavior patterns, where modern health knowledge increasingly coexists with, and in some cases replaces, traditional belief systems. However, despite this shift, the persistence of myths among a subset of participants remains significant, particularly because these beliefs strongly influence behavior among those who adhere to them. From an analytical perspective, this variation highlights a dual pattern in the community, comprising a group that is more aligned with evidence-based healthcare practices and a group that continues to be influenced by culturally transmitted beliefs. This duality contributes to the phenomenon of health behavior oscillation, not only within individuals but also at the community level, where differing belief systems coexist and shape maternal practices in complex ways, providing direct support for Proposition 3 ([Smith, Andrews, Fink, Danaei, McCoy, Sudfeld, Peet, Cho, Liu, Finlay, Ezzati, Kaaya, & Fawzi, 2019](#)).

4.7 Pregnancy Myths as Determinants of Behavior

Consistent with previous studies, cultural beliefs act as strong determinants of maternal practices ([Aynalem, Melesse, & Bitewa, 2023](#); [Cukarso, & Herbawani, 2020](#)). In this study, myths functioned as behavioral norms that override biomedical recommendations. This reflects a sociocultural context where knowledge is not solely derived from formal health systems but also from familial and community structures, a pattern also documented among Javanese women navigating their first pregnancy under the guidance of family elders ([Gayatri, Silvani, Pirade, Akingbade, Harjo, and Hastuti, 2023](#)) and reflected in enduring community ceremonies such as Tingkeban that mark and reinforce pregnancy related expectations ([Austi yana, 2021](#); [Zulkifli, Yenni, Sari, Rachel, & Sasihade, 2023](#)).

4.8 Sleep Restriction and Maternal Health Risks

The restriction of sleep identified in this study contradicts evidence emphasizing the importance of adequate sleep during pregnancy. Sleep plays a crucial role in immune regulation, hormonal balance, and fetal development. Disrupted sleep patterns have been linked to adverse outcomes such as low birth weight and preterm birth ([Wang et al., 2020](#); [Murata et al., 2021](#)). Thus, culturally driven sleep restriction may contribute to suboptimal intrauterine conditions, which are known risk factors for stunting, and this risk is compounded in a setting such as Samarinda where broader socioeconomic disparities in child undernutrition are already well documented at the district level across Indonesia ([Ayuningtyas et al., 2022](#); [Widyaningsih et al., 2022](#)).

4.9 Food Taboos and Nutritional Consequences

Food restrictions observed in this study align with global evidence showing that pregnancy related food taboos can negatively affect maternal nutrition ([Ramulondi et al., 2021](#)). Avoidance of protein rich foods such as seafood may reduce essential nutrient intake, including omega-3 fatty acids and iron, which are critical for fetal growth. Maternal undernutrition remains a key determinant of stunting ([Alfarisi et al., 2019](#); [Agushybana et al., 2022](#)). Suggesting that these culturally driven dietary restrictions may indirectly contribute to the persistence of stunting, particularly where

micronutrient deficiency is already correlated with household socioeconomic disadvantage ([Ernawati et al., 2021](#)).

4.10 Health Behavior Oscillation as a Novel Concept

The key contribution of this study is the identification of health behavior oscillation. Unlike previous research that focuses on single risk factors, this study demonstrates that behaviors fluctuate due to competing influences between cultural beliefs and medical knowledge. This oscillation leads to inconsistent sleep patterns, irregular dietary intake, and reduced adherence to health recommendations. Such instability may cumulatively affect maternal health and fetal development, representing an underexplored pathway in stunting etiology. The findings suggest that interventions to reduce stunting must go beyond nutritional supplementation and address cultural belief systems. Culturally sensitive education, involving community leaders and family members, is essential to bridge the gap between traditional beliefs and evidence-based practices, an approach consistent with quasi experimental evidence showing that structured nutrition and reproductive health education for pregnant women in Indonesia can shift maternal knowledge and practice when delivered in a locally grounded manner ([Permatasari et al., 2021](#)).

An important and novel contribution of this study lies in the identification of a dual pattern of belief systems among pregnant women, where modern health knowledge and traditional myths coexist within the same community. Unlike previous studies that tend to portray cultural beliefs as uniformly dominant in shaping maternal behavior ([Aynalem et al., 2023](#); [Ramulondi et al., 2021](#)). The findings of this study reveal that a considerable proportion of participants no longer adhere to pregnancy related myths and instead rely on biomedical advice from healthcare providers. This coexistence creates a dynamic and non-linear behavioral landscape, in which maternal health practices are not solely determined by either tradition or modernity, but by an ongoing negotiation between the two. In this context, the concept of health behavior oscillation becomes particularly relevant and represents a key novelty of this study.

Rather than viewing behavior as static or dichotomous, traditional versus modern, this study demonstrates that behaviors fluctuate across a continuum influenced by multiple knowledge systems. Oscillation occurs not only within individuals who may simultaneously believe in medical advice yet still follow certain myths but also at the community level, where different groups adhere to different belief frameworks. This finding extends existing literature by introducing a more nuanced understanding of how cultural beliefs interact with health behaviors. Previous research has primarily focused on the presence of harmful practices or the lack of knowledge as determinants of maternal and child health outcomes ([Agushybana et al., 2022](#); [Alfarisi et al., 2019](#)). However, this study highlights that variability and inconsistency in behavior, driven by competing belief systems, may be an equally important pathway influencing maternal health and, ultimately, stunting risk.

From a public health perspective, this duality presents both challenges and opportunities. On one hand, the persistence of myths among certain groups continues to pose risks through sleep restriction and dietary limitations. On the other hand, the presence of a group that adopts evidence-based practices indicates a window of opportunity for behavioral change interventions. Therefore, the novelty of this study lies not only in identifying pregnancy myths but in demonstrating how the interaction between belief systems produces oscillating health behaviors, which may contribute to suboptimal maternal conditions linked to stunting. This conceptual contribution offers a new lens for understanding behavioral determinants of stunting and underscores the need for culturally adaptive, rather than purely informational, health interventions.

MODEL KONSEPTUAL HUBUNGAN MITOS KEHAMILAN → OSILASI PERILAKU KESEHATAN → KEJADIAN STUNTING

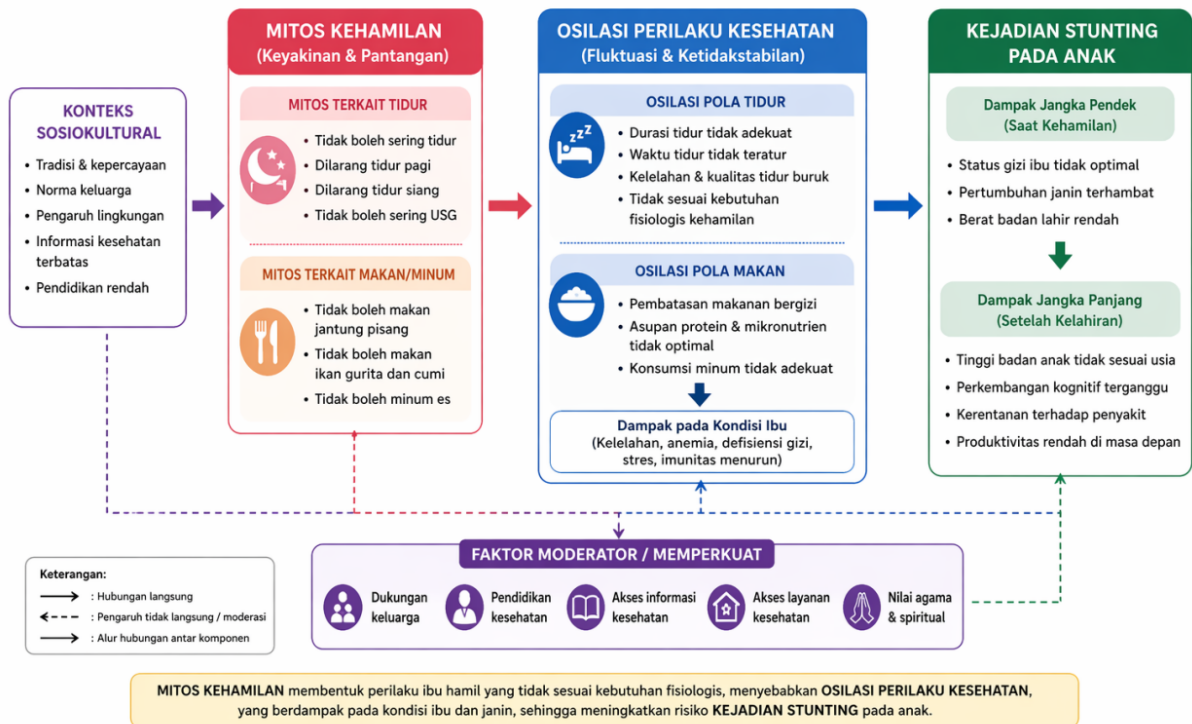


Figure 1. Conceptual model of pregnancy myths, health behavior oscillation, and stunting risk.

Figure 1 depicts the conceptual pathway developed inductively from the thematic analysis, showing how pregnancy myths operating through sleep restriction and food taboos generate an oscillating rather than a stable pattern of maternal health behavior, and how this oscillation, together with the coexisting subgroup of biomedically oriented pregnant women within the same community, converges on a potential increase in stunting risk. The model positions health behavior oscillation as the central mediating mechanism connecting cultural belief structures to the physiological pathway of maternal undernutrition and disrupted rest that is already established in the stunting literature.

5. Conclusions

5.1 Conclusion

This study demonstrates that pregnancy related myths continue to shape maternal health behaviors in complex and often subtle ways. More importantly, the findings reveal that these beliefs do not operate in isolation but interact dynamically with modern health knowledge, creating what this study conceptualizes as health behavior oscillation. This oscillation is reflected in fluctuating patterns of sleep and dietary practices, where pregnant women navigate between cultural expectations and biomedical recommendations. A key insight from this study is that not all women adhere to such myths, indicating an ongoing transition in health behavior within the community. However, among those who do, the influence of myths remains strong enough to alter daily practices in ways that may compromise maternal wellbeing and fetal development. These inconsistencies, particularly in sleep regulation and nutritional intake, represent a potential but often overlooked pathway contributing to stunting risk. The significance of this study lies in its contribution to a new approach to stunting prevention, which moves beyond conventional nutrition focused strategies toward a more behavioral and cultural framework. By introducing the concept of health behavior oscillation, this study highlights the need to address not only what mothers know, but how they negotiate between competing belief systems in their everyday lives. Efforts to reduce stunting should incorporate culturally sensitive interventions that engage with existing beliefs rather than simply attempting to replace them. Integrating community values, involving family and local influencers, and aligning

health messages with cultural contexts may provide a more effective pathway to sustainable behavioral change.

5.2 Research Limitations

This study has several limitations that should be considered when interpreting the findings. Although a relatively large number of participants were included, not all respondents reported the presence of pregnancy related myths in their communities, and a greater proportion of participants indicated that they were not aware of or did not adhere to such beliefs, so the analysis of myths and their influence on health behaviors is based on a subset of participants, which may limit the representativeness of the findings regarding the overall population. While the large sample size enhances the breadth of perspectives, phenomenological research typically emphasizes depth of individual experience, so the inclusion of a large number of participants may have constrained the level of in-depth exploration for each individual narrative. The study was conducted in selected primary healthcare centers within two sub-districts in Samarinda, which may limit the transferability of the findings to other regions with different sociocultural contexts. The data relied on self-reported experiences, which may be subject to recall bias and social desirability bias, particularly when discussing culturally sensitive beliefs and practices. Finally, although this study identified links between pregnancy myths, behavioral oscillation, and potential stunting risk, it did not directly measure nutritional status or child growth outcomes, so causal relationships cannot be established.

5.3 Suggestions and Directions for Future Study

Future research is encouraged to extend the present findings in several directions. Subsequent studies could combine the phenomenological approach used here with direct measurement of maternal nutritional status and infant growth outcomes, allowing the proposed link between health behavior oscillation and stunting to be tested more directly rather than inferred from qualitative narrative alone. Future research could also examine health behavior oscillation longitudinally across the course of a single pregnancy, since the balance between myth adherence and biomedical orientation described by participants in this study may itself shift as pregnancy progresses or as women accumulate additional antenatal care visits. Comparative studies conducted in other regions of Indonesia with differing ethnic and cultural compositions would help establish whether the specific myths and the oscillation pattern identified in Samarinda generalize to other sociocultural settings or are locally specific. Future studies could further explore the design and evaluation of culturally sensitive intervention programs that explicitly engage family elders and community leaders as partners in behavior change, testing whether such engagement reduces the intensity of health behavior oscillation observed among myth adhering participants. Finally, future work could examine whether the dual pattern of belief systems identified in this study, comprising myth adhering and biomedically oriented subgroups, is associated with measurable differences in antenatal care attendance or pregnancy outcomes, which would help clarify the practical stakes of the coexistence documented here.

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Author Contributions

SNZ conceived and designed the study, supervised data collection, led the phenomenological analysis, and drafted and revised the manuscript. DR contributed to participant recruitment, conducted in-depth interviews, and performed transcription and initial coding of the data. AR contributed to thematic analysis, member checking, and critical revision of the manuscript. All authors read and approved the final manuscript.

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