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Housing Instability During Pregnancy in Indianapolis, Indiana: A Study of Financial Strain, Habitability, and Toxic Living Environments

Paige Klemme [1,*], Shamika Morales [2], Esteli Bankole [1] and Jack Turman, Jr. [1]

[1] Department of Pediatrics, Indiana University School of Medicine, Indianapolis, IN 46202, USA; ebankole@iu.edu (E.B.); jaturman@iu.edu (J.T.J.)
[2] School of Social Work, Indiana University, Indianapolis, IN 46202, USA; slmorris@iu.edu
* Correspondence: pklemme@iu.edu; Tel.: +1317-278-0552

Highlights

Public health relevance—How does this work relate to a public health issue?

- Housing instability during pregnancy is a maternal and infant public health issue because unstable, unaffordable, unsafe, or inadequate housing can create chronic stress and interfere with conditions necessary for a healthy pregnancy, including prenatal care, adequate rest, food and medication storage, and preparation for an infant.
- This study demonstrates that housing instability is shaped by interconnected social and structural determinants of health, including affordable housing shortages, financial insecurity, employment and childcare barriers, interpersonal violence, and limited tenant protections, rather than being solely an individual housing problem.

Public health significance—Why is this work of significance to public health?

- Conventional definitions of homelessness may underestimate housing instability among pregnant individuals, who may be doubled-up with others, frequently moving, living in unsafe housing, or remaining in abusive relationships because they lack alternatives. This can leave substantial housing-related health risks unidentified until they reach a crisis.
- Housing instability occurred alongside substantial psychological distress: 36% of participants reported moderate or greater depressive symptoms and 40% reported moderate or greater anxiety symptoms, highlighting the importance of considering structural housing conditions when addressing maternal mental health and health equity.

Public health implications—What are the key implications or messages for practitioners, policy makers and/or researchers in public health?

- Practitioners and policymakers should move upstream from crisis response to prevention, identifying housing instability during pregnancy before literal homelessness occurs and pairing screening with meaningful assistance through coordinated healthcare, housing, legal, domestic violence, childcare, employment, and social service systems.
- Structural solutions and further research are needed. Policies should expand affordable and habitable housing, strengthen tenant protections and eviction prevention, and improve income, workplace, childcare, and domestic violence supports; research should also examine more diverse populations and longitudinally assess how different dimensions of prenatal housing instability affect maternal and child outcomes.

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Abstract

Housing instability during pregnancy is increasingly recognized as a critical social determinant of maternal and infant health. Pregnant women experiencing housing insecurity

face heightened risks of stress, inadequate prenatal care, poor birth outcomes, and long-term health inequities. Indianapolis, Indiana, experiences disproportionately high rates of eviction, housing unaffordability, and substandard housing conditions, placing low-income pregnant women at substantial risk of housing insecurity and poor birth outcomes. Objective: This study examines the experiences of pregnant women facing housing instability who were enrolled in a housing intervention in Indianapolis, Indiana. It describes and explores the structural, social, and personal factors that contributed to their housing instability. Methods: Participants were recruited from women experiencing housing insecurity in Indianapolis, Indiana, United States of America and enrolled in CareSource Medicaid. Data are presented to elucidate the context of pregnancy and housing insecurity for participants. Results of the biopsychosocial intake of the 50 participants were aggregated to understand key features of this demographic. Finally, a thematic analysis of a semi-structured interview at intake provides the women's perspectives on their life circumstance. Results: We also report intake characteristics for the 50 women who received the housing intervention. On average, participants (n = 50) were 27 years old, single, non-Hispanic Black, and had a high school diploma or GED. The qualitative analysis identified three major contributors to housing instability during pregnancy: (1) financial hardship and unaffordable housing; (2) uninhabitable housing and limited tenant protections; and (3) unsafe or harmful living environments, including domestic violence and interpersonal instability. Conclusions: Housing instability during pregnancy in Indianapolis disproportionately impacts single Black mothers, which reflects broader structural inequities related to housing affordability, inadequate tenant protections, employment discrimination, and gendered vulnerability. The findings highlight the urgent need for integrated housing and maternal health interventions, stronger housing protections, and public health policies that recognize stable housing as essential to maternal and infant well-being.

Keywords: housing instability; pregnancy; maternal health; eviction; qualitative research; Indianapolis; housing insecurity; social determinants of health

1. Introduction

Housing instability during pregnancy is increasingly recognized as a structural social determinant that can expose pregnant people and families to recurring stress. It may involve overlapping financial hardship, unsafe housing, displacement, and harmful interpersonal relationships. Instability in one area can also unsettle other supports, including employment, childcare, healthcare, and social connections [1,2]. National survey research among families with infants and toddlers likewise describes associations between material hardship and parental psychological distress, although these findings are not specific to pregnancy [3].

Observational research has linked housing instability and homelessness during pregnancy to inadequate prenatal care, preterm birth, low birth weight, neonatal intensive care admission, and delivery complications [4–6]. Housing disadvantage has been linked with poorer mental health, including maternal psychological distress [1,7]. These associations do not establish that housing instability alone causes adverse outcomes. In particular, a national analysis of maternal morbidity found that some differences associated with unhoused status were attenuated after adjustment for clinical and pregnancy characteristics [8].

These challenges are relevant in Indianapolis and Marion County, where reports describe rising rental costs, housing cost burdens, and a shortage of affordable homes for low-income families [9,10]. These reports describe local and state housing conditions, not the prevalence of housing instability during pregnancy. Within this context, pregnant people

may be balancing work, childcare, and family support needs while managing housing-related stress [1,2].

Housing instability can develop when health, employment, and financial pressures compound. For example, someone with a high-risk pregnancy may be advised to reduce work or take bed rest. If they are the household's primary earner and lack paid leave, disability benefits, or savings to replace lost wages, keeping up with rent may become difficult. Low or unpredictable wages, childcare and medical costs, transportation, utility bills, food insecurity, and debt can further limit a family's financial cushion. If a family falls behind on rent, it may face eviction or a forced move, and may need to stay with relatives or friends—sometimes in crowded conditions that reduce privacy and strain relationships. These outcomes are not inevitable, but research links housing instability with maternal mental health concerns and adverse perinatal outcomes, and has found an association between eviction during pregnancy and adverse birth outcomes [1,5,6].

Homelessness among families can include more than living unsheltered or in an emergency shelter. Under the McKinney–Vento education program, children and youth may qualify as homeless when they are sharing another person's housing because of housing loss or economic hardship, living in a motel or shelter, or staying in another temporary arrangement [11,12]. Indiana's housing questionnaire reflects this broader understanding by asking about doubled-up living and other temporary situations [11]. Although McKinney–Vento is an education-specific definition and does not determine adult eligibility for all housing programs, it offers a useful model for identifying forms of family housing instability that narrower measures may miss [12,13].

This broader lens matters because families may not disclose housing hardship or seek formal assistance if they fear judgment, child welfare involvement, or separation from their children. Some may also face limited safe alternatives, including staying with or returning to an abusive partner. These concerns can make temporary or unsafe arrangements less visible to service providers and housing counts [13–15]. A pregnancy-specific study of homelessness assistance describes how complex eligibility requirements, safety concerns, and fear of not being believed can affect pregnant people seeking help [14]. Recognizing these circumstances may help maternal health services identify housing needs earlier and connect families with support that addresses safety as well as housing [2,7].

This study describes pregnant participants receiving a housing intervention and examines how structural conditions shaped their experiences. The analysis focuses on financial insecurity, inadequate housing, and harmful interpersonal relationships. By examining how these conditions intersect, the study considers housing instability in relation to maternal mental health and broader maternal and infant health concerns [1,5,6]. The findings may inform practice by helping providers recognize the varied experiences of pregnant individuals and the conditions that compound housing instability.

2. Materials and Methods

2.1. Study Setting and Sample

Individuals in this study are participants recruited to our ongoing implementation of the Healthy Beginnings at Home (HBAH) intervention, funded by the U.S. Dept. of Health, Health Resources and Services Administration (HRSA). Healthy Beginnings at Home (HBAH) is a person-centered housing intervention to improve birth outcomes. It consists of providing housing navigation services, case management, and 12–24 months of rental/utility assistance for pregnant women experiencing housing insecurity (funding levels changed during the intervention period). Eligibility criteria included being pregnant at less than 28 weeks' gestation at enrollment, experiencing housing insecurity, residing in Marion County, and being enrolled in CareSource Medicaid (state run federal health

insurance program serving people who are at or below the poverty threshold). This paper explores the number of pregnant women experiencing requesting housing services (self-referral portal, n = 527), the demographic information for the women who enrolled in the intervention (intake data, n = 50), the context surrounding housing insecurity for pregnant women in Indianapolis (qualitative interviews, n = 17). We present findings collected from our self-referral portal, as well as intake demographic data inclusive of mental health screening results, and a thematic analysis of an open-ended question conducted at intake. All study procedures were reviewed and approved by the university's Institutional Review Board (IRB) prior to initiation.

2.2. Recruitment

We used nonprobability convenience sampling to recruit eligible participants through self-referral and referrals from CareSource and community providers. The HBAH self-referral portal, launched within six months of enrollment, used a Qualtrics screener to identify pregnant individuals who were less than 28 weeks pregnant, experiencing housing instability, living in Marion County, and enrolled in CareSource Medicaid. Eligible individuals were contacted when enrollment was open; otherwise, they could be waitlisted. The study enrolled 50 participants.

Portal data from October 2023 through June 2026 provide local context on housing needs among people seeking support. Of 527 unique self-referrals, 50% identified as homeless and 40.4% as housing unstable. Nearly 8% reported being in the eviction process; 10.8% reported an eviction in the past year, 10.2% in the past two to three years, and 9.7% four or more years ago. Frequencies were analyzed using SPSS.2.3.

2.3. Baseline Intake

The remaining sections will focus on data collected at intake, first the quantitative demographic information collected at intake of participants who enrolled in HBAH followed by qualitative data and analysis also collected at intake.

All referred individuals completed an eligibility screen to confirm that they were less than 28 weeks pregnant, experiencing housing instability, living in Marion County, and enrolled in CareSource Medicaid.

The research team developed a demographic questionnaire and biopsychosocial assessment for intake. REDCap was used to collect and store intake data. The variables were selected to support the housing navigation partner and to inform case management goals. They covered participants' demographics, finances, employment, transportation, legal circumstances, pregnancy, housing, household, access to community resources, barriers, strengths, and housing-related goals.

During enrollment, participants reviewed an information and authorization sheet. Those who consented completed a housing preferences form to begin the housing search and scheduled a biopsychosocial intake with an HBAH staff member. Intake took 60–120 min and was conducted at the HBAH office or in a private study room at a nearby library. Participants also completed the GAD-7, PHQ-9, and PCL-6 mental health screening tools.

Depressive symptoms. The Patient Health Questionnaire-9 (PHQ-9) is a 9-item validated tool used to screen for depression symptoms. Individuals use a Likert scale (0, "Never" to 3, "Nearly every day") to rate symptoms like a loss of interest in activities, sleep disturbance, and suicidal ideation over the most recent two weeks. Total scores range from 0 to 27, with higher scores indicating depressive symptoms [16]. The PHQ-9 shows 88% specificity and sensitivity for major depression, with scores equal to or greater than 10 being clinically significant for depression [16]. In a meta-analysis of studies examining

PHQ-9 during pregnancy and post partum, the pooled sensitivity of 0.84 and specificity of 0.81 suggests that it is a reliable and accurate tool for use in perinatal individuals [17].

Anxiety symptoms. Anxiety was measured using the Generalized Anxiety Disorder -7 (GAD-7) scale. Like the PHQ-9, the GAD-7 uses a Likert scale (0, "Never" to 3, "Nearly every day") to screen for the presence and severity of anxiety [18]. The seven questions include questions addressing both the cognitive and somatic symptoms of anxiety over the past two weeks. Total scores range from 0 to 21, with scores of 10 or higher indicating generalized anxiety [18]. The GAD-7 shows high internal consistency with Cronbach's alphas ranging = 0.89–0.90) across pregnant and postpartum individual [19,20].

Trauma symptoms. Trauma-related symptoms were assessed using the six-item PTSD Checklist (PCL-6), an abbreviated version of the PTSD Checklist developed for screening in primary care [21]. The PCL-6 assesses self-reported post-traumatic stress symptoms, with six items scored from 1 (not at all) to 5 (extremely), yielding a possible total score of 6–30. Prior research has examined a cutoff of 14 or higher for screening and monitoring clinical response [22], whereas validation among underserved primary care patients identified a cutoff of 17 or higher for identifying patients with greater clinical need [23]. The full PTSD Checklist has been studied among pregnant women, but those findings do not establish pregnancy-specific validity or an optimal cutoff for the abbreviated PCL-6 [24]. In this study, scores of 14 or higher were treated as positive screens for elevated trauma-related symptoms, not as PTSD diagnoses. One participant skipped one PCL-6 item, producing an incomplete recorded sum of 5; this value falls below the minimum possible complete score of 6. This incomplete response was not used for classification against the screening cutoff.

Socioeconomic Status. Given that housing instability and eligibility for Medicaid were eligibility criteria for participation in HBAH we used questions from various intakes and screening forms used by our community partners (example Appendix A.2). This approach allowed us to assess social and contextual factors associated with maternal health outcomes beyond the standard SDOH screening tools used for the general patient population.

2.4. Qualitative Data and Analyses

Although 50 women ultimately enrolled in HBAH, 34 had enrolled by the time of the initial qualitative analysis August 2024. The semi-structured interview questions were voluntary, and 30 of the 34 women chose to answer, their responses were recorded and transcribed. Some participants declined audio recording, and participants could choose which questions to answer. Interviews were conducted from May 2023 through July 2024. More than 17 interviews were recorded overall; the analysis focused on responses to the question about barriers to housing stability.

The first author developed the interview guide, which two Indianapolis women with lived experience of housing insecurity reviewed. Their feedback informed revisions to the questions' wording, order, and clarity, strengthening the guide's relevance and content validity. The interviews explored participants' perspectives on factors associated with housing insecurity. The primary question was "What barriers prevent you from achieving housing stability?" Follow-up prompts addressed income and work, relationships and safety, housing quality inside and outside the home, and landlord relations.

We reached theme saturation after 13 responses. We analyzed 4 additional responses to check whether new themes emerged, for a total of 17. This sample size is consistent with a systematic review suggesting that qualitative studies may reach saturation with 9–17 participants, depending on sample heterogeneity [25].

2.5. Qualitative Data Collection and Management

Responses to the question were audio-recorded. All recordings were professionally transcribed verbatim. Data materials including audio files, transcripts, codebooks, analytic memos, and field notes were stored on encrypted university systems accessible only to authorized research personnel. Identifiers were removed during transcription, and linkage files were stored separately. Field notes and reflexivity memos were maintained throughout the research process to document contextual observations, analytic decisions, and researcher reflections.

Analysis followed the steps outlined in Mintus et al. [26] for qualitative analysis. Two members of the team coded the interviews using a sensitizing concept (e.g., financial strain, uninhabitable living environment, limited relationships) and open coding. Examples of subthemes generated from open coding included "lack of affordable housing" "restriction of income due to pregnancy" "Partner relationships" "Holes in floor", etc. Coders met to compare interpretations, discuss discrepancies and ensure analytic consistency. NVivo 14 qualitative analysis software was used to organize, code, and manage the data. NVivo supported secure data management, coding organization, framework matrices, and audit trail documentation. We attempted to move beyond categorizing data by understanding the intrinsic and systemic factors that accompany experiences of housing instability during pregnancy. The team finalized themes using interpretive titles and exemplar quotes.

The findings were discussed iteratively with the senior author to support analytic rigor and interpretation. Representative quotations were selected to support thematic development. Our reporting of qualitative data is based on the Standards for Reporting Qualitative Research (SRQR) framework [27]. To help promote the validity of the qualitative analysis process, the research team presented qualitative findings to 12 HBAH participants in July of 2024, where there was overall agreement, the only additional feedback was to intentionally state domestic violence rather than partner relationships.

3. Results

3.1. Intake Data for Mothers Enrolled in Healthy Beginnings at Home

We enrolled 50 pregnant women in Healthy Beginnings at Home (HBAH) between April 2023 and May 2026. Table 1 and Appendix B present descriptive statistics that characterize participants who experienced housing instability and provide context for the study's findings. Intake questions were voluntary and not required for program eligibility, so response counts vary by item. Categorical variables are reported as counts and percentages; continuous variables are reported as means, standard deviations, and ranges.

Table 1. Demographics.

Age (n = 50)			**Education Completed (n = 49)**		
M = 27.37	SD = 4.65	Range = 18.9–35.5	Less than High School	n = 9	18.4%
	Race (n = 50)		High School/GED	n = 27	55.1%
White	n = 13	26%	Some College/Training	n = 11	22.4%
Black	n = 34	68%	Associate's degree	n = 2	4.1%
Multiracial	n = 3	6%	Marital Status (n = 50)		
	Ethnicity (n = 50)		Single (never married)	n = 43	86%
Hispanic/Latina	n = 2	4%	Married	n = 3	6%
Not Hispanic	n = 47	94%	Divorced	n = 3	6%
Other	n = 1	2%	Not married living with partner	n = 1	2%

3.2. Participant and Household Characteristics

At enrollment, participants were typically 27 years old, single, non-Hispanic Black, and had a high school education. They had experienced an average of 2.78 pregnancies, including the current pregnancy (SD = 1.49; range = 1–8). Nearly half (47.1%) reported a previous miscarriage, and 5.9% reported the death of a child before age one.

Household composition varied. Nearly half (46%) had no other child expected to live with them, and 36% planned to live without another adult. Most households (86%) included three or fewer people.

3.3. Employment and Transportation

At intake, 32.7% of participants were employed, while 44.9% were unemployed and seeking work. Among those who reported barriers to working or increasing their hours, pregnancy-related limitations were most common (60.5%), followed by unreliable transportation (37.2%). Participants were typically in their second trimester at enrollment.

Transportation challenges also affected access to meetings and appointments. Difficulties had prevented 40% of participants from attending nonmedical meetings and 36.7% from attending appointments. Vehicle access was limited: 38.8% had no access to a vehicle, and 22% had access only sometimes. Those with access often borrowed or shared a vehicle, and gas costs remained a burden.

3.4. Financial Strain and Basic Needs

Because housing instability and Medicaid eligibility were HBAH enrollment criteria, the intake assessment also gathered information about participants' broader social and financial circumstances. Of the 46 participants who answered the financial well-being question, 45.7% (n = 21) said they were "just getting by," and 37% (n = 17) said it was difficult to get by. In total, 82.7% reported one of these levels of financial strain; 15.2% (n = 7) said they were doing okay, and one participant (2.2%) said they were living comfortably.

Among the 40 participants who reported on basic needs over the previous three months, the most common difficulties were transportation (60%, n = 24), food (52.5%, n = 21), and hygiene supplies (47.5%, n = 19). Participants also reported difficulty affording or accessing childcare (25%, n = 10) and medical care (12.5%, n = 5).

Food insecurity was common. In the previous 12 months, 61.7% of respondents had at least sometimes worried that food would run out before they had money to buy more; 25.5% said this happened often. Meanwhile, 70.2% reported that food had at least sometimes run out before they had money to buy more, and 25.5% said this happened often.

3.5. Legal and System Involvement

Housing-related legal issues were reported by 43.3% of participants, often involving eviction. Debt-related legal issues were reported by 36.7%. These issues may create additional barriers to securing housing.

About one-quarter of participants (26.5%) reported current or past criminal charges. A similar proportion reported Department of Child Services (DCS) involvement during their own childhood (26.5%); 28.6% reported DCS involvement with their own children.

At the time of intake, participants completed mental health screenings for depression (PHQ-9), anxiety (GAD-7), and post-traumatic stress symptoms (PCL-6). Table 2 presents the mean, standard deviation, and range of scores for each screening measure. These screening tools were used to assess participants' mental health symptoms and were not intended to provide clinical diagnoses. Participants who scored in the moderate range or higher on any of the screening measures, or who indicated that they were interested in receiving mental health services, were referred to a mental health provider for further

assessment and services. While the average screening scores did not indicate clinically significant levels of mental health symptoms, the ranges and distribution of scores presented in Table 3 provide a more complete picture of participants' mental health needs at intake. Just over a third of participants (36%) indicated moderate or greater levels of depressive symptoms and 40% of participants indicated a total of moderate or higher anxiety symptoms. These findings should also be interpreted with caution. The screening measures were self-reported, and some symptoms assessed by the measures may overlap with pregnancy-related symptoms. In addition, case managers conducting the intakes noted instances in which participants reported lower symptom levels on the standardized screening measures than might have been expected based on information disclosed elsewhere during the intake process.

Table 2. Mental Health Screening.

Assessment Tool	Mean	SD	Range
PHQ-9 (n = 49)	8.10	6.26	0–22
GAD-7 (n = 49)	7.91	6.22	0–20
PCL-6 (n = 50) *	13.73	6.44	5–28

* One PCL-6 response omitted an item (recorded sum 5). The reported descriptive statistics include this incomplete sum and should be recalculated using complete questionnaires for final reporting.

Table 3. Mental Health Symptom Distribution.

PHQ-9 Score	Depression Symptom Severity	n (%)
0–4	None/minimal	19 (38%)
5–9	Mild	13 (26%)
10–14	Moderate	8 (16%)
15–19	Moderately Severe	7 (14%)
20–27	Severe	3 (6%)
GAD-7	**Generalized Anxiety Symptoms**	**n (%)**
0–4	Minimal Anxiety	22 (44%)
5–9	Mild	8 (16%)
10–14	Moderate	8 (16%)
15+	Severe	12 (24%)
PCL-6	**PTSD Symptoms**	**n (%)**
≤13	Negative PTSD Screen	28 (57%)
14+	Positive PTSD Screen	21 (43%)

PCL-6 classification based on 49 complete responses; one incomplete response excluded. Negative: 28/49 (57%); positive: 21/49 (43%).

Several factors may have contributed to potential underreporting of mental health symptoms, including stigma, concerns about disclosure, and limited rapport at the time of intake. For example, 14.3% (n = 49) of participants reported experiencing interpersonal violence from a current or former partner within the previous year at intake. However, this percentage likely underrepresents the prevalence of domestic violence within the population, as additional experiences of domestic violence were disclosed after participants had established rapport and trust with their case managers. Similarly, one participant later shared that she had intentionally been cautious when completing the mental health screenings because she feared that reporting significant mental health symptoms could be used against her in matters related to the custody of her children.

Taken together, these observations suggest that average screening scores alone may not fully capture the complexity or extent of participants' mental health needs at program

entry. The distribution of scores, information gathered throughout the intake process, and disclosures made after relationships with case managers were established provide important context for interpreting the initial screening results.

3.6. Qualitative Data

The results presented in the preceding section describe participants' characteristics and circumstances at intake, providing context for understanding the housing, financial, pregnancy-related, and mental health challenges experienced by participants entering the HBAH program. To further understand participants' experiences of housing instability, qualitative interviews at intake explored the circumstances that contributed to their current housing situations. Participants were asked to describe what led to their housing instability and the barriers they encountered in achieving stable housing.

Participant narratives identified three primary and interconnected contributors to housing instability: (1) financial strain and housing affordability, (2) uninhabitable housing conditions and limited recourse, and (3) toxic and unsafe relationships. Within these broader themes, participants described challenges related to the housing system, employment during pregnancy, prior evictions, poor indoor environmental conditions, neighborhood safety, domestic violence, relationships with family and friends, and landlords or property managers.

Theme 1: Financial Strain and Housing Affordability

Financial strain emerged as a central pathway into housing instability. Participants described difficulty maintaining housing as rents increased while their financial resources remained limited or became less stable. Housing instability was not always the result of a single financial event; rather, participants described combinations of high housing costs, limited affordable housing options, changes in employment, and prior housing histories that made obtaining or maintaining housing increasingly difficult.

3.7. Housing System Challenges

Participants described encountering a housing market in which available housing was often unaffordable, difficult to access, or did not meet their families' needs. For some, substantial increases in rent precipitated the loss of otherwise stable housing.

> *Where I was living at? I was living in the one bedroom, and they wanted to go up almost $400 in rent, and it just wasn't worth it. The apartment wasn't worth that money, and then they didn't have any 2 bedrooms available. And then in the time looking for a new apartment, I just was not able to find one.* Participant 6

Other participants encountered problems even after securing housing. Participant 14 described experiencing a housing scam, living in hotels for an extended period, and eventually being placed in an apartment that differed from the unit specified in the lease:

> *Basically, I'm move here from [location] and had a house, but it was a scam. So we lived in the hotel for about a year and a half and then switched to a different hotel. And then we finally got approved for the apartment. I signed a lease for a 2 bedroom apartment. They threw me in a one bedroom.* Participant 1

These experiences demonstrate that financial resources alone did not determine participants' ability to secure stable housing. Availability, affordability, housing practices, and previous housing experiences also shaped participants' options.

3.8. Intersection of Pregnancy and Employment

Pregnancy and employment also intersected with participants' financial and housing instability. Some participants described reductions in work hours or employment changes that decreased their income during pregnancy. Participant 15 described how reduced hours ultimately contributed to leaving her employment:

> *It decreased my hours more than needed from the [workplace], which then caused me to resign from the [workplace].* Participant 15

Even when participants received financial assistance, maintaining housing could remain difficult when employment was inconsistent or limited. As one participant explained:

> *I was able to get some rental assistance to help with the payments, and I wasn't working full time, and it was a challenge to make the repay the way.* Participant 16

Participants' accounts therefore highlighted an important intersection between pregnancy, employment, income, and housing. Changes in employment during pregnancy could reduce already limited financial resources, increasing participants' vulnerability to housing instability.

3.9. Eviction History

Participants also identified prior evictions as both a consequence of financial instability and a barrier to obtaining subsequent housing. Job loss could quickly contribute to eviction when families had limited financial resources. Participant 3 explained:

> *Our last apartment had evicted us due to the termination of employment with my husband.* Participant 3

Importantly, an eviction continued to affect participants even after they had obtained the financial resources necessary to pay rent and a security deposit. Participant 5 described the lasting consequences of having an eviction on her record:

> *Then I have an eviction, so that's hard too. Like I could have saved up some money and still wouldn't have been able to get approved for an apartment. Even if I had the first month's rent and the security deposit. It doesn't matter.* Participant 5

Thus, eviction functioned not only as an outcome of housing instability but also as a mechanism through which instability could persist. Once participants had an eviction history, securing subsequent housing became more difficult, even when their immediate financial circumstances improved.

Theme 2: Uninhabitable Housing Conditions and Limited Recourse

Housing instability was not defined solely by whether participants had a physical place to live. Participants frequently described residing in housing that was unsafe, unhealthy, or inadequately maintained. Two related dimensions emerged within this theme: poor indoor environmental conditions and unsafe neighborhood environments. Participants' narratives demonstrated that remaining housed could itself present risks, particularly when housing conditions threatened their own health or safety and that of their children.

3.10. Poor Indoor Environmental Conditions

Participants described mold, water damage, plumbing failures, pest infestations, electrical concerns, and other forms of housing disrepair. Mold and water damage were particularly prominent in participants' accounts. Participant 14 described extensive mold following a plumbing failure that was not adequately addressed:

Black mold grew up underneath the cabinets. There's mold all-I have pictures of mold. When the pipe busted, the water came all down there. They didn't come and clean it up, nothing. So there's mold under the carpet. Participant 14

Other participants described maintenance responses that they perceived as inadequate. Participant 13 explained:

They didn't even test to see if there was mold in there. They just sprayed some stuff in there and put up dry wall and put tiles back over it. Participant 13

These experiences placed participants in the position of choosing between remaining in housing they perceived as unhealthy and leaving without necessarily having another stable housing option. Participants' accounts also reflected a perceived lack of control over whether housing problems would be adequately addressed by landlords or property managers.

3.11. Unsafe Neighborhood Environments

Safety concerns extended beyond conditions inside participants' homes. Several participants described living in neighborhoods or locations characterized by violence, crime, or other threats to personal safety. Participant 2 described recurrent gun violence immediately outside her residence:

Actually this morning I had someone shooting outside my windows. I know they have bulletproof windows, but that's not the first time this happened. Participant 2

For participants experiencing homelessness, safety concerns were similarly present. Participant 16 described staying outdoors in locations where police encounters and threats to people experiencing homelessness were common:

Under the bridge on the [road name], and also sometimes there's abandoned house on [road name]. I mean, the police have already come up twice. I have a tent, so nothing's happen to me, but I've had things happen to friends who are in similar situations. There are other people down there. Participant 16

Together, these accounts demonstrate that participants' conceptualizations of housing stability included more than obtaining shelter. Housing needed to provide an environment in which participants could feel physically safe and where basic living conditions were adequately maintained.

Theme 3: Toxic and Unsafe Relationships

The third major pathway to housing instability involved interpersonal relationships. Participants described domestic violence, conflict with family and friends, unsafe shared living arrangements, and difficult relationships with landlords or property managers. When participants could no longer maintain independent housing, they often relied on partners, relatives, friends, or acquaintances for temporary housing. Although these arrangements provided shelter, they could also introduce new forms of instability, including interpersonal conflict, lack of privacy, emotional distress, and threats to physical safety.

3.12. Domestic Violence

Domestic violence was an important contributor to housing instability for several participants. Leaving an abusive or unsafe relationship could simultaneously mean leaving a residence and losing access to stable housing. One participant directly connected her shelter residence to domestic violence:

Currently I am living in the shelter because of a domestic situation. Participant 2

For other participants, separation from a partner did not necessarily eliminate the threat to safety. Participant 13 described a former partner continuing to appear at her home after she had attempted to limit contact:

> *He has popped up. He popped up last week at my house and I made him leave. That was the time that Mondays when he smashed his hand. He popped up in my house Wednesday because I changed my number, and he thought my number was off or my phone was off.* Participant 13

Another participant explicitly connected a toxic relationship to an eviction, stating, "*that was the second eviction that year…I broke my lease because I was in like a toxic relationship*".—Participant 4

These accounts illustrate how the need to establish personal safety could require participants to leave housing, break leases, or enter temporary or emergency housing arrangements.

3.13. Family and Friend Relationships

When independent housing was unavailable, participants frequently relied on informal housing arrangements with family members, friends, partners, or acquaintances. Although these arrangements could prevent literal homelessness, participants often described them as overcrowded, stressful, or unstable.

Participant 6 described living in an overcrowded home where she had slept on the floor for several months:

> *It's horrible. Horrible. I just took what I could get. I sleep on the floor. I've been sleeping on the floor for 5 months. It's a house full of people, so I have no privacy, don't get no space.* Participant 6

In some instances, informal living arrangements also created significant safety risks. Participant 8 described a conflict within a shared residence that escalated to a firearm being displayed:

> *There was someone else that was living there. And it was like my friend and his nephew and then me and then his nephew. I guess stuff kept coming up missing. He thought it was me. He pulled out a gun. I called the police, got arrested. Can't stay there anymore.* Participant 8

Participants' experiences demonstrate the precarious nature of relying on informal social networks for housing. Family and friends could provide an immediate place to stay, but these arrangements did not necessarily provide the privacy, security, autonomy, or permanence associated with stable housing.

3.14. Relationships with Landlords and Property Managers

Participants also identified interactions with landlords and property managers as contributing to housing instability. Participants described difficulty obtaining repairs and resolving problems with rental properties. Participant 4 stated:

> *"No, every time I called them out to fix something they never would come fix it. So that's another reason why I went through this."* Participant 4

In more extreme circumstances, participants described alleged misconduct by individuals responsible for managing their housing. Participant 17 described a property manager taking tenants' money orders:

> *Our property manager at the time, up until she got relieved of her position, she was keeping our money orders. We would turn in our rent, and she would rather us bring in a blank*

money order saying she would fill it out for us. But she was actually cashing them out for herself. Participant 17

These accounts suggest that participants' housing stability was influenced not only by their individual financial resources or behaviors but also by relationships with individuals and systems that controlled access to and maintenance of their housing.

3.15. Intersecting Pathways to Housing Instability

Although financial strain, uninhabitable housing conditions, and toxic or unsafe relationships emerged as distinct themes, participants' narratives indicated that these experiences rarely occurred in isolation. Instead, the three pathways frequently intersected and reinforced one another. Financial strain limited participants' housing options, potentially increasing reliance on lower-quality housing or temporary arrangements with family, friends, or partners. Unsafe or poorly maintained housing could prompt participants to leave a residence despite having few affordable alternatives. Similarly, leaving an abusive or otherwise unsafe relationship could result in the immediate loss of housing and increase dependence on shelters or informal living arrangements.

Participants' experiences further suggest a cyclical process in which an initial disruption could create additional barriers to future housing stability. For example, employment loss or reduced work hours could contribute to an inability to pay rent and subsequent eviction. An eviction could then limit access to future rental housing, resulting in reliance on temporary or unsafe housing arrangements. Likewise, leaving an unsafe relationship could protect a participant from immediate interpersonal harm while simultaneously creating financial and housing instability.

Across these accounts, housing instability emerged as a multidimensional and interconnected process rather than a singular event attributable to one individual-level factor. Participants' narratives demonstrate how financial vulnerability, housing conditions, interpersonal relationships, and housing system barriers interacted over time, narrowing participants' available housing options and contributing to continued instability during pregnancy.

4. Discussion

The findings of this study indicate that housing instability among pregnant individuals in Indianapolis extends beyond the absence of shelter or the inability to pay rent. Participants described interconnected challenges involving housing affordability and habitability, employment, childcare, interpersonal safety, and access to enforceable tenant protections. Importantly, these challenges rarely occurred in isolation. Instead, participants' experiences revealed a ripple effect in which difficulties in one area of life intensified instability in others. For example, pregnancy-related reductions in employment or income could compromise the ability to afford housing, while limited childcare options could further restrict employment opportunities. Similarly, exposure to interpersonal violence could increase the need for alternative housing, yet financial insecurity and the lack of affordable options could make leaving an unsafe living situation difficult. These findings are consistent with research linking housing disadvantage to child health, perinatal outcomes, and psychological well-being [6,7,28], while providing additional insight into how multiple structural and interpersonal challenges intersect and compound one another during pregnancy.

The contribution of this study lies in illustrating how these interconnected circumstances shape housing stability and influence the accessibility and feasibility of potential solutions. Although housing, employment, and supportive services may technically be available, participants' experiences demonstrate how overlapping barriers can make these resources difficult to access, sustain, or use safely. These findings highlight the importance of understanding housing instability not as an isolated condition, but as one that is closely

connected to other dimensions of an individual's life, particularly during pregnancy, when physical, financial, employment, and caregiving demands may intensify existing vulnerabilities. By examining how these factors interact, this study adds a pregnancy-specific perspective to the broader literature on housing instability and underscores the need for interventions that address interconnected challenges rather than housing needs alone. However, the study does not establish causal relationships or estimate the population prevalence of these experiences.

4.1. Housing Instability During Pregnancy May Be Hidden Within Conventional Definitions of Homelessness

Participants described staying temporarily with relatives or friends, moving repeatedly, occupying inadequate housing, and remaining in unsafe relationships because alternatives were unavailable. Farero et al. developed and validated a seven-item housing instability scale across English- and Spanish-speaking respondents and urban and rural settings, illustrating the value of measuring housing insecurity as more than a single housing-status category [29]. Their measurement study supports the broader construct underlying the present findings, although it was not designed specifically for pregnancy. Research on crowding and child well-being likewise suggests that housing arrangements need to be evaluated for their conditions and consequences, not simply whether a roof is present [2,30].

The distinction between housing instability and literal homelessness also has operational consequences. Indiana's McKinney–Vento education housing questionnaire explicitly recognizes families staying with others because of housing loss or economic hardship, as well as shelters, motels, and other temporary arrangements [11]. This broader education system approach contrasts with the narrower situations captured by Point-in-Time counts [13]. The National Network for Youth has documented how differences among federal definitions influence eligibility and recognition of hidden homelessness, although its analysis principally concerns youth rather than pregnant adults [12]. Marea et al.'s pregnancy-specific qualitative study provides a complementary example of how homelessness-assistance requirements may fail to match pregnant people's circumstances [14].

The Indianapolis findings add accounts of how these definitional and service system gaps intersect with pregnancy, interpersonal safety, and housing quality. Local data underscore the importance of this distinction without directly measuring the study population. SchoolHouse Connection estimated that 7864 Indiana children ages 0–3 experienced homelessness during 2023–2024, while 393 were identified as enrolled in the programs included in its state profile [31]. These estimates do not establish the number of pregnant people experiencing housing instability, and the enrollment measure is not a complete census of services. Nevertheless, they illustrate the scale of early-childhood housing need and the limits of program-based identification. Similarly, approximately 500 households sought Healthy Beginnings at Home (HBAH) assistance despite limited advertising, whereas 50 could be housed. This difference reflects expressed demand and program capacity, not a population prevalence rate or proof of why each household could not be placed. Together, these observations support assessing affordability, safety, stability, and housing dependence during prenatal encounters rather than relying solely on shelter status.

4.2. Housing Instability Is Produced Through Interconnected Structural Constraints

Participants' accounts linked pregnancy-related reductions in work capacity with rental affordability, while childcare availability, transportation, and shift schedules restricted access to jobs. Housing cost burden research has similarly examined the relationship between housing expenses and material hardship [32]. The present study contributes pregnancy-specific and local detail: an available job was not necessarily feasible if its schedule conflicted

with childcare or pregnancy-related needs. These mechanisms should not be interpreted as quantified causal pathways, but they complicate explanations of housing instability based on individual employment decisions alone.

Evidence from housing interventions helps clarify the distinction between structural resources and service navigation. In the randomized Family Options Study of 2282 families recruited from shelters, Gubits et al. found that priority access to long-term rental subsidies reduced subsequent homelessness and food insecurity and improved some adult and child outcomes compared with usual care, whereas the other tested interventions had comparatively limited effects [33]. The families in that trial were already experiencing sheltered homelessness; its estimates cannot be applied directly to pregnant Indianapolis residents or to HBAH. Nonetheless, the trial provides stronger evidence than descriptive accounts alone that sustained affordability support can change housing outcomes. Newman et al.'s housing voucher experiment likewise reported improvements in affordability and a modest reduction in parental stress [34].

Indiana's shortage of affordable units remains a central constraint: the cited housing report estimates 34 affordable and available rental units per 100 extremely low-income renter households, with 74% of those households severely cost-burdened [10]. In this context, HBAH's unmet demand illustrates an implementation challenge rather than a demonstrated failure of case management. Financial assistance, housing navigation, and supportive services may be valuable, but families must still locate safe, appropriately sized, accessible units. The present study extends the intervention literature by identifying pregnancy-specific barriers to translating assistance into an actual housing placement, including the interdependence of work, childcare, transportation, and habitability.

4.3. Housing Stability Requires Safety, Habitability, and Meaningful Autonomy

Housing security in these accounts depended not only on whether participants remained housed, but also on whether they could live safely, address disrepair, and leave harmful interpersonal arrangements without losing shelter. Sullivan et al.'s evaluation of Domestic Violence Housing First offers intervention evidence that survivor-directed housing advocacy and flexible assistance can improve housing stability and aspects of safety [35]. Schmidt's qualitative research on negotiating apartment disrepair similarly helps contextualize why renters with few alternatives may remain in inadequate conditions [36]. The present findings contribute a pregnancy-specific perspective on these constrained choices rather than a new estimate of the effectiveness of either intervention.

Housing-quality concerns also have an established clinical and legal dimension. In a pediatric primary care-based medical–legal partnership, Beck et al. identified a cluster of substandard rental units and reported completed repairs in 10 of 14 units with outcome data, as well as broader repairs across the owner's properties [37]. The study was a small descriptive investigation, not a randomized estimate of medical–legal partnership effectiveness. It demonstrates how healthcare identification of housing hazards can be connected to legal and community action. Graetz et al.'s national eviction analysis documents the substantial exposure of households with children to eviction proceedings [38], reinforcing the importance of protecting families from displacement while seeking repairs or safety.

These comparisons sharpen the interpretation of the Indianapolis findings: legal rights may be difficult to exercise when reporting disrepair could provoke retaliation, when tenants lack counsel, or when no alternative unit is affordable. Housing interventions should therefore be evaluated not only for placement or retention but also for habitability, interpersonal safety, long-term housing stability, and meaningful autonomy. The present study did not directly test legal interventions or quantify the health effects of specific housing hazards.

4.4. Structurally Produced Housing Insecurity May Contribute to Maternal Psychological Distress

In this study, 36% of participants reported moderate or greater depressive symptoms and 40% reported moderate or greater anxiety symptoms. These symptoms occurred alongside uncertainty about rent, eviction, unsafe conditions, employment, childcare, and interpersonal relationships. A systematic review by Singh et al. links housing disadvantage with poor mental health across diverse populations [7], while national survey findings among parents with infants and toddlers associate material hardship with anxiety, depression, and stress [3]. These studies support considering structural hardship when interpreting psychological distress, but neither establishes causation in the present sample.

Intervention research offers a useful counterpoint to purely observational associations. In a pilot randomized trial of medically complex, housing-unstable families, Bovell-Ammon et al. evaluated coordinated housing, financial, legal, and case management assistance and reported greater improvements in parental anxiety and depression scores and children's health at six months relative to usual care [39]. The pilot was small, involved families with existing children and medical complexities, and did not establish that the same intervention would produce comparable effects during pregnancy. Newman et al.'s voucher experiment found a modest improvement in parental stress but not clear improvements in depression or anxiety [34]. Together, these findings caution against assuming that housing assistance uniformly resolves psychological symptoms, even when it reduces material hardship.

The present study contributes an account of the multiple, simultaneous uncertainties that may accompany distress during pregnancy. Its cross-sectional findings cannot determine whether housing instability preceded psychological symptoms or whether unmeasured factors influenced both. They nevertheless support testing integrated approaches that address housing security alongside clinical mental healthcare, rather than treating distress solely as an individual-level problem.

4.5. Housing Should Be Understood as Part of Maternal and Infant Health Infrastructure

Existing perinatal research establishes the relevance of housing insecurity to pregnancy outcomes. DiTosto et al.'s systematic review identified associations with preterm birth, low birth weight, neonatal intensive care admission, delivery complications, and inadequate prenatal care, while noting heterogeneous definitions and limitations in study quality [6]. Himmelstein and Desmond found associations between eviction during pregnancy and adverse birth outcomes in Georgia [5]. These findings from previous research help contextualize the Indianapolis results by highlighting the potential implications of the housing-related challenges participants described for maternal and infant health. Although the present study did not directly examine these health outcomes, participants' experiences provide important insight into how housing instability may contribute to conditions that place maternal and infant health at risk. Evidence on the built environment and birth outcomes [40] and the health of very young children [28] further supports housing quality and stability beyond shelter access.

Cross-sector service delivery also informs the practical implications. Beck et al. examined 2203 children referred to a primary care-based medical–legal partnership and reported lower subsequent hospitalization rates than in matched comparison cohorts [41]. The observational design cannot isolate which legal or social intervention component produced the association, and the study concerned pediatric rather than prenatal care. In combination with the housing condition improvements described in Beck et al.'s earlier study [37], these findings provide a rationale for testing partnerships among prenatal care, housing providers, legal advocates, and social services.

The 2026 Harvard scientific review emphasizes housing stability and quality during pregnancy and early childhood and recommends earlier identification and coordinated

supports [42]. The Indiana education questionnaire [11] and infant–toddler profile [30] show how housing identification and access to services already span multiple systems. The present study adds evidence about where such systems may fail to connect in practice: families may be recognized as having needs without finding an affordable, safe unit; a referral may not resolve a landlord dispute; and employment assistance may be ineffective without compatible childcare. HBAH illustrates the promise of coordinated housing assistance as well as the constraints imposed by limited housing supply.

Accordingly, future evaluations should measure multidimensional housing instability, including forced moves, doubling up, affordability, habitability, safety, and autonomy, and should distinguish housing outcomes from maternal mental health and infant health outcomes. Comparative studies could assess whether earlier pregnancy-specific screening paired with housing resources, flexible financial assistance, legal advocacy, and childcare coordination improves sustained stability. The study's principal contribution is not a new demonstration that housing matters for health, but a grounded explanation of how overlapping structural barriers can make safe, sustainable housing difficult to obtain during pregnancy.

5. Limitations

This study has several limitations. First, participants were women connected to housing resources through the Healthy Beginnings at Home (HBAH) program. Their experiences may not reflect those of pregnant individuals who do not access formal housing assistance, including individuals experiencing less visible forms of housing instability. This limitation is particularly relevant given the study's findings that housing instability may involve doubled-up living arrangements, unsafe housing conditions, and dependence on interpersonal relationships rather than literal homelessness. Consequently, the experiences of individuals who remain unidentified by conventional homelessness surveillance and service systems may be underrepresented.

Second, this study was conducted in Indianapolis, Indiana, where local housing market conditions, affordable housing availability, employment opportunities, childcare access, social service infrastructure, and landlord–tenant policies shaped participants' experiences. Although the findings may offer insights relevant to other communities experiencing similar structural constraints, their transferability to different geographic and policy contexts requires further investigation.

Third, the study design does not permit causal conclusions regarding the relationship between housing instability and maternal psychological distress. Although 36% of participants reported moderate or greater depressive symptoms and 40% reported moderate or greater anxiety symptoms, these findings cannot establish that housing instability caused or exacerbated those symptoms. This study also cannot determine the directionality of relationships among housing instability, financial insecurity, interpersonal safety, and mental health. Longitudinal research is needed to examine how the timing, duration, severity, and cumulative dimensions of housing instability during pregnancy relate to maternal psychological distress and subsequent maternal and infant health outcomes.

Finally, the findings reflect participants' experiences within the context of a specific housing assistance initiative and do not establish the effectiveness of HBAH or its individual program components. Although the demand for assistance and the barriers encountered during implementation provide important insights into unmet housing needs and service delivery constraints, these observations should not be interpreted as evidence of intervention effectiveness. Further evaluation is needed to determine which combinations of rental assistance, housing navigation, case management, legal advocacy, and other supportive services most effectively improve housing stability and maternal and infant health outcomes.

Implications and Future Research

The findings support approaches that identify and address housing instability before it progresses to literal homelessness, eviction, or other acute crises. Consistent with existing research on housing assistance and family well-being, the results suggest that interventions should address both immediate housing needs and the structural conditions that constrain access to safe, affordable, and sustainable housing. Potential approaches include expanding affordable housing availability, strengthening habitability enforcement and tenant protections, preventing eviction, improving pregnancy-related workplace and income protections, and increasing access to childcare and domestic violence services.

The interconnected barriers identified in this study also highlight the potential value of coordinated, multidisciplinary interventions. Integrating housing assistance with prenatal healthcare, case management, legal advocacy, employment support, and interpersonal violence services may help address needs that cannot be resolved through housing navigation alone. However, existing intervention research indicates that improvements in housing stability do not necessarily produce equivalent improvements across all health and psychosocial outcomes. Accordingly, the effectiveness of integrated approaches should be evaluated rather than assumed, with particular attention to the independent and combined contributions of financial assistance, housing availability, and supportive services.

Future research should examine housing instability among broader and more diverse populations, particularly pregnant individuals who are not connected to formal housing assistance programs. Studies should also evaluate how definitions and screening measures influence the identification of housing insecurity during pregnancy, including circumstances involving doubled-up living arrangements, housing unaffordability, unsafe conditions, eviction risk, and dependence on controlling or abusive relationships.

Comparative research across jurisdictions with different housing markets, tenant protections, employment conditions, childcare resources, and social policies could help identify the structural factors that mitigate or exacerbate housing instability during pregnancy. Longitudinal studies are also needed to investigate how the timing, duration, and accumulation of housing-related stressors influence maternal mental health, prenatal care utilization, birth outcomes, and child development.

Finally, intervention research should examine not only whether families obtain housing but also whether that housing remains affordable, habitable, safe, and sustainable over time. Evaluations of housing assistance programs should incorporate measures of housing autonomy, psychological well-being, interpersonal safety, and family stability alongside traditional indicators such as shelter use, eviction, and residential mobility. Such research could help determine which interventions are most effective for pregnant and postpartum populations and inform the development of more responsive, equitable housing and maternal health systems.

6. Conclusions

This study contributes to the growing literature on housing instability and maternal health by illustrating how housing insecurity during pregnancy is shaped by interconnected structural, economic, environmental, legal, and interpersonal conditions. Participants' experiences demonstrate that housing instability extends beyond the absence of shelter and may persist even when an individual has a physical place to live. Employment constraints, insufficient income, limited childcare availability, inadequate housing supply, unsafe living conditions, eviction risk, and interpersonal dependence interacted to restrict participants' ability to obtain and maintain stable housing.

These experiences occurred alongside substantial psychological distress, with 36% of participants reporting moderate or greater depressive symptoms and 40% reporting

moderate or greater anxiety symptoms. Although the study cannot establish causal relationships, the findings reinforce the importance of considering maternal psychological well-being within the broader social and structural conditions surrounding pregnancy. They also extend existing research by highlighting how pregnancy-specific employment and caregiving constraints may interact with housing insecurity and how conventional housing assistance systems may be insufficiently responsive to these overlapping needs.

An important contribution of this study is its emphasis on the distinction between being housed and experiencing meaningful housing stability. Housing that is unaffordable, unsafe, inadequate, or dependent on an abusive or controlling relationship may provide temporary shelter without offering the security and autonomy necessary for sustained family well-being. Consequently, definitions and assessments focused primarily on literal homelessness may overlook pregnant individuals experiencing significant housing-related vulnerability.

The experiences documented through HBAH further illustrate the limitations of relying exclusively on individual-level assistance when affordable and habitable housing remains scarce. Although rental assistance, case management, and housing navigation can provide important support, their capacity to achieve sustained stability depends in part on broader housing availability, economic security, enforceable tenant protections, and access to complementary services.

Taken together, these findings support understanding safe, affordable, habitable, and autonomous housing as a foundational component of maternal and infant health infrastructure. Addressing housing instability during pregnancy requires coordinated efforts across housing, healthcare, legal, employment, childcare, domestic violence, and social service systems, alongside structural approaches that improve access to stable housing. By identifying the interconnected barriers that shape housing insecurity during pregnancy, this study provides a basis for more comprehensive screening, intervention development, and future research aimed at improving maternal well-being and advancing maternal and infant health equity.

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Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki and approved by the Institutional Review Board of Indiana University (Protocol Number: 16637; date of approval: 3 April 2023).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data not available as this study involved a vulnerable population and was geographically focused.

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Abbreviations

The following abbreviations are used in this manuscript:

HBAH	Healthy Beginnings at Home
IN	Indiana

Appendix A

Appendix A.1

Appendix A.1 provides self-referral questions described in the Section 2.

1. Do you have Medicaid?
   1a. Who is your Medicaid provider? If you are unsure about your Medicaid provider, please contact 1-877-GET-HIP-9 (877-438-4479) to confirm your Medicaid health plan.
2. Do you currently live in Marion County (Indianapolis)?
3. Are you currently pregnant?
   3a. How many weeks pregnant are you?
4. Are you currently experiencing issues with housing such as (select the option that best applies to your current situation)
5. Have you ever been evicted? (Choose all that apply)
   5a. Did you appear in court?

Appendix A.2

Example Questions from the HBAH Partner Housing Navigation Form that were incorporated into HBAH Housing preference data collection.

The form collected information to help the housing partner understand applicants' household composition, housing history, and potential barriers to securing housing. Example questions included the following:

1. Who would live in the apartment with you? Please list each person's relationship to you and whether they are employed or in school.
2. Is anyone likely to visit frequently who would not be on the lease? If so, what circumstances or boundaries should you and your case manager discuss?
3. Where are you living now, and how long have you lived there?
4. Do you currently pay rent, and is your name on a lease?
5. What would you like potential landlords to know about your housing situation?
6. Where have you lived previously, and why did you move?
7. Do you or anyone in your household owe money to a current or former landlord? If so, how much, and have you made payments or kept documentation?
8. Have you or anyone in your household had past-due utility bills connected to a previous home?
9. Have you ever been evicted from a home where your name was on the lease? If so, when, and is there an outstanding balance?
10. Have you or anyone in your household faced legal action related to unpaid bills or property damage, or broken a lease? If so, what happened?

Appendix B

Appendix B provides supplemental data related to the Section 3.

Impairments/Disabilities (Check All that Apply) (n = 50)		
None known	n = 44	88%
Traumatic Brain Injury	n = 1	2%
Learning/reading Difficulties	n = 2	4%
Hard of Hearing	n = 1	2%
Communication	n = 2	4%
Neurological	n = 1	2%
Other	n = 4	8%
How many children will be living with you (not inclusive of the child you are carrying)? (n = 50)		
0	n = 23	46%
1	n = 10	20%
2	n = 11	22%
3	n = 4	8%
4	n = 1	2%
5	n = 1	2%
Total number of individuals, including yourself, who will live in the apartment (not counting the child you are carrying). (n = 50)		
1	n = 18	36%
2	n = 12	24%
3	n = 13	26%
4	n = 4	8%
5	n = 2	4%
6	n = 1	2%
Barriers to you working more (check all that apply) (n = 43)		
Pregnancy-related limitations	n = 26	60.50%
Lack of transportation	n = 16	37.20%
Could not find a job	n = 13	30.20%
Other	n = 11	26%
Health limitations or disability	n = 10	23.30%
Other family/personal obligations	n = 8	18.60%
Lack of affordable childcare	n = 7	16.30%
Employer not willing to adjust work expectations due to pregnancy	n = 7	16.30%
Employer not offering more hours	n = 5	11.60%
Employer fired or let go	n = 4	9.30%
In school or training	n = 2	4.7%

In the past 12 months, has lack of transportation kept you from medical appointments, meetings, work or getting things you need for daily living? (check all that apply) (n = 49)		
Yes, it has kept me from medical appt. or getting medication.	n = 18	36.70%
Yes, it has kept me from non-medical meetings, appointments, work, or getting things that I need.	n = 20	40.80%
No	n = 23	46.90%
Do you have access to a vehicle? (check all that apply) (n = 49)		
Yes, I own/lease a reliable vehicle.	n = 8	16.30%
Yes, but it is unreliable.	n = 7	14.30%
Yes, but I struggle to buy gas.	n = 9	18.40%
How well you are managing financially now? (n = 46)		
Living comfortably	n = 1	2.20%
Doing okay	n = 7	15.20%
Just getting by	n = 21	45.70%
Finding it difficult to get by	n = 17	37%
In the past 3 months, did you have trouble affording, or accessing? (check all that apply) (n = 40)		
Food	n = 21	52.50%
Childcare	n = 10	25%
Transportation	n = 24	60%
Medical needs	n = 5	12.50%
Hygiene supplies	n = 19	47.50%
Other	n = 9	22.50%
Within the past 12 months, you worried that your food would run out before you had money to buy more. (n = 47)		
Often true	n = 12	25.50%
Sometimes true	n = 17	36.20%
Never true	n = 18	38.30%
Within the past 12 months, the food you bought didn't last and you didn't have money to get more. (n = 47)		
Often true	n = 12	25.50%
Sometimes true	n = 21	44.70%
Never true	n = 14	29.80%
Are you experiencing any legal challenges? (check all that apply) (n = 30)		
Housing	n = 13	43.30%
Debt	n = 11	36.70%
Family relationships	n = 5	16.70%
Employment	n = 3	10%
Government payments	n = 5	16.70%
Other	n = 6	20%

Judicial System Involvement (n = 48)	**Yes n (%)**	**No n (%)**
Are you on probation?	2 (4.1%)	47 (95.9%)
Are you on parole?	1 (2%)	48 (98%)
Do you have past or current criminal charges?	13 (26.5%)	36 (73.5%)
Are you currently involved with Department of Child Services/Child Protective Services? *	4 (8.3%)	44 (91.7%)
Do you have past involvement in DCS/CPS? (check all that apply) (n = 48)	**Endorsed n (%)**	
Yes as a child	13 (26.5%)	
Yes for one of my children	14 (28.6%)	
No	28 (57.1%)	

* Department of Child Services (DCS) Child Protective Services (CPS)

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