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# Establishing trust through home visits during pregnancy: a realist evaluation of a Danish breastfeeding support intervention

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## Abstract

**Background** Breastfeeding has numerous health benefits but social inequality in breastfeeding is documented in many high-income countries. The evidence for improving breastfeeding support through prenatal encounters is conflicting, but points towards a mechanism activated through a positive relationship between the families and their health care providers. A Danish intervention included a home visit by a health visitor during pregnancy to prolong breastfeeding and reduce social inequality in its rates. The purpose of this study was to investigate how this home visit affected breastfeeding support across socioeconomic groups with attention to how, and for whom, it activated a mechanism of improved relationship and trust between the health visitor and the family.

**Methods** Our study used a realist evaluation approach and was embedded in a cluster randomized trial carried out in 20 municipalities. In the intervention arm, we observed 35 home visits delivered by the health visitors, interviewed 16 mothers and conducted 6 focus groups with a total of 34 health visitors to examine the intervention mechanisms and contextual factors that influence the generation of outcomes. The analysis applied Luhmann's, and Brown and Meyers' concepts of trust as middle-range theories.

**Results** The pregnancy home visit helped early establishment of trust which enhanced the subsequent breastfeeding support postpartum in numerous ways. In realist terms, our central mechanism of change, *the establishment of trust*, had optimal conditions for success in the contextual setting of the pregnancy home visit where there was *time, peace, undisturbed conversations, mental capacity to reflection,* and *a perceived more even power balance* between the family and the health visitor which resulted in a range of positive outcomes. The mechanism resulted in improved tailored breastfeeding support postpartum, families reaching out to the health visitor sooner when experiencing breastfeeding difficulties, and families expressing a more positive experience of breastfeeding. The mechanism was activated across the different socioeconomic groups.

**Conclusions** The circumstances of the pregnancy home visit helped to establish trust between the health visitor and the family. Especially for families in vulnerable positions, the pregnancy home visit seems to be a potent driver for enhancing the gains from breastfeeding support.

**Keywords** Breastfeeding, Intervention, Realist evaluation, Prenatal support, Relational support, Home visit, trust, Social inequality, Complex interventions

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**Text box 1. Contributions to the literature**

There is a lack of research on how breastfeeding support can reduce social inequality in breastfeeding.

When new families trust their health professional, they feel more confident and capable of breastfeeding.

Home visits from a health visitor to initiate breastfeeding support before the baby is born appear to enhance trust and improve the breastfeeding experience, especially for families in vulnerable positions.

## Background

Breastfeeding is one of the most effective ways to ensure child health and survival and the public health benefits of breastfeeding are well documented [1, 2]. For children breastfeeding prevents a vast range of illnesses, including infections, diabetes and heart disease and for mothers breastfeeding reduces the risk of e.g. breast and ovarian cancers [2]. The World Health Organization (WHO) recommends exclusive breastfeeding for the first six months and continued breastfeeding for up to two years or beyond as a global public health measure [3]. The proportion of women who initiate breastfeeding after birth in Denmark is among the highest globally [4] with more than 97% initiating breastfeeding [4, 5]. Yet, in recent years, the proportion of Danish women breastfeeding exclusively for six months has reached no more than 14% [6]. In high income countries including Denmark there is considerable social inequality in breastfeeding [4, 7], in that mothers of low socio-economic position breastfeed for a shorter duration of time [7, 8].

### Prenatal breastfeeding support

The evidence concerning the effect of prenatal breastfeeding support and -preparation on duration of breastfeeding is scarce with conflicting conclusions and of limited quality [9, 10]. However, prenatal breastfeeding preparation in combinations with postpartum support [11] and especially close follow-up the first months after birth can extend the duration of breastfeeding, even for mothers who are at an increased risk of early breastfeeding cessation [12–14]. A recent systematic review finds that prenatal support can increase the mother's confidence, knowledge, and positive attitudes towards breastfeeding [15], which is important as many mothers feel insecure about breastfeeding when they are discharged postpartum, and insecurity is related to early breastfeeding cessation [16]. Prenatal breastfeeding support can be delivered through a pregnancy home visit, where a health visitor meets the expecting family prior to birth. While the scientific evidence of the pregnancy home visit is limited, the practice-based knowledge is evident. In a recent evaluation report based on collection of experiences in Denmark, the pregnancy home visit was found to have a major impact on the relationship formation and collaboration between the family and the health visitor [17]. Participating health visitors and families underlined the uniqueness of pregnancy home visits in that the baby is not yet the center of the conversation allowing for a more focused dialogue [17]. The report concluded that the pregnancy home visit qualified the health visitor's individual guidance postpartum, increased the chances of detecting families in vulnerable positions and promoted early intervention when needed, and improved continuity of care across sectors – all aspects that increase the chances of a successful breastfeeding [17].

### The importance of the relationship between the health care provider and family on the benefits of breastfeeding support

While trying to initiate breastfeeding, a considerable amount of mothers experience difficulties, ranging from 40 to 92% [18–20], and many feel unprepared for the challenges of breastfeeding [21–24]. Mothers establishing breastfeeding often need help from health professionals and may feel uncertain about whom to turn to for help [25]. A recent study confirms that access to advice about breastfeeding from a strong support person helps mothers establish breastfeeding and continue for six months [25]. A positive relationship with the health professional has been highlighted as essential to parents' benefit from breastfeeding support [24, 26], especially among parents in vulnerable positions [24]. This positive and supportive relationship entails communication [27] and factors such as respect, empathy and in particular trust [26].

### The intervention 'Breastfeeding – A Good Start Together'

To increase exclusive breastfeeding rates at four months and reduce social inequality in breastfeeding the evidence-based intervention 'Breastfeeding – A Good Start Together' was developed [28, 29]. A Danish needs assessment illustrated that usual care (see the setting description) was not sufficient to meet the individual needs of families [24] and that health visitors requested strengthened competencies [29] . The intervention has two tiers, one basic and one intensified. The basic intervention works through a strengthened universal prenatal and postpartum breastfeeding support offered within the municipality-based health visiting program. In addition to delivering the latest evidence-based breastfeeding support, the intervention has a strong focus on tailored communication that enhances the relationship formation between the health visitor and the family both prenatally and postpartum. A pregnancy home visit from the health visitor was implemented in the intervention arm to promote prenatal breastfeeding preparation and to establish early rapport between the health visitor and family.

The intensified intervention additionally encompassed frequent telephone calls from the health visitor targeting mothers in high risk of early breastfeeding cessation (in present study defined as mothers below the age of 25 and/or with low educational attainment). The purpose of the telephone calls was to promote proactive breastfeeding counselling at times where mothers usually experience breastfeeding difficulties.

### Realist methodology for investigating breastfeeding support

Given the scarce evidence concerning the effect of prenatal breastfeeding support visits, the importance of the visit for building rapport and trust, and the positive practice-based experience, the realist approach was chosen. The realist evaluation focuses on uncovering causal processes that help explain why an intervention works or does not work rather than solely document outcomes [30]. Breastfeeding practices are highly affected by political, historical, social, and cultural contexts [31], and support is delivered in a complex interplay: by health care providers with varying competences across the health care sectors to parents with varying needs, experiences, and resources. A central tenet of realist methodology is that interventions work differently in different contexts, because the mechanisms needed to achieve a certain outcome are activated and enhanced to different degrees by different contextual factors [32]. In that sense, the realist approach embraces the complexity of 'Breastfeeding – A Good Start Together' and allows us to investigate how and why the intervention might achieve success in one setting and fail or only partially succeed in a different setting, by considering local contexts.

### Aim

Thus, using a realist approach, the purpose of the present study is to investigate how a specific intervention element: the pregnancy home visit, may work to strengthen breastfeeding support. We illuminate how and for whom the pregnancy home visit potentially activates a mechanism of strengthening the relationship and trust between the health visitor and the family with special attention to the dynamics of the mechanism across different socioeconomic groups. To unearth what trust means, how it is enacted and how it influences breastfeeding support, we employ abductive reasoning drawing on the sociologists Luhmann's, and Brown and Meyer's perspectives [33, 34]. This theoretical lens enables elucidation of the structural contingencies of trust, including individuals' prior experiences with health care and welfare state institutions. These we find vital for understanding this specific home visit encounter and unraveling dynamics of social inequality.

## Methods

### Setting and usual breastfeeding support

In Denmark, postpartum breastfeeding support is initiated immediately after giving birth in the hospital setting. Following early discharge, families usually receive a home visit from a health visitor within the first week after birth. Danish health visitors are registered nurses with a minimum of three years of full-time clinical experience and an additional 1.5 years of training [35]. Approximately 97% of parents accept the universal, municipality-based and tax-financed health visiting program [36, 37].

A core tenet of the Danish health visiting program is its strong focus on being relationship-based. The overall aim of the program is to promote health of the child, covering a range of topics, including breastfeeding support [37]. The Danish Health Authority recommends a minimum of five consultations (mostly home visits) to all children and their families from birth to one year of age [37]. In certain cases, the health visitor can schedule a home visit during pregnancy if a special need within the family is identified. Municipalities can locally decide to allocate resources for pregnancy home visits, but they are not obliged by state regulations to offer this service [37]. 17 out of the 20 municipalities included in the current study offer pregnancy home visits, but the criteria for allocation of the visit varies ranging from a universal offer to all expectant parents, to first-time parents, to parents with multiple pregnancies, to only parents in vulnerable positions.

In Denmark, prenatal breastfeeding preparation is fragmented. Maternity wards develop and organize birth- and parenting preparation classes in collaboration with the municipality-based health visiting programme in accordance with local agreements. The Danish Health Authorities recommend that birth- and parenting classes are held in smaller groups and that breastfeeding preparation is one of the topics addressed [9]. Despite recommendations, many maternity wards offer auditorium or online lectures in larger groups.

### Design of the realist evaluation

The intervention was implemented in a cluster randomized trial in 20 municipalities across Denmark with 10 clusters in each arm [28]. The implementation was conducted in 2022–2023 and will be evaluated in a comprehensive evaluation design comprising a process- [38], effectiveness-, realist-, and health economic evaluation [28]. Informing the realist evaluation, we collected data from six of the 10 intervention sites. The six municipalities were carefully selected to obtain maximum variation relating to size, location (urban/rural) and population composition.

The present study consisted of a triangulation of participant observations, individual semi-structured interviews

with mothers and focus groups with health visitors, all taking place between December 2022 and October 2023. We applied realist interview techniques for individual interviews and the focus groups. In practice, applying realist interviewing techniques implies that we deliberately, yet cautiously, share our tentative hypotheses about the intervention mechanisms, hoping to receive feedback from our informants pertaining to their hands-on and practical knowledge of the intervention to challenge, refine or discard the hypotheses [39].

Realist evaluations investigate how and for whom an intervention produces outcomes (O) by activating certain mechanisms of change (M) in a specific contextual setting (C) [40]. The interplay or configuration between context, mechanism and outcome (CMO) is the analytical focal point and the realist approach thereby nuances the results of the randomized controlled trial of the breastfeeding intervention. We applied Pawson and Tilley's understanding of context as an "*irreducible set of factors influencing when and how an intervention is delivered and how mechanisms are triggered*" [40]. Pawson et al. (2004) suggest that contextual factors occur at four levels: The individual, interpersonal, institutional setting, and the wider (infra-) structural and welfare system [41]. In this article, the inherent power dynamics in health care encounters were central to the analytical process. We focused on the interpersonal dynamics between the health visitor and the families, while also considering how the institutional and infrastructural levels of the visiting program influenced the intervention's mechanisms. Particularly significant were families' prior experiences with the health care system and welfare authorities, which we approached as the individual contextual level of the family structured by the institutional and infrastructural levels. Consequently, our analysis encompasses all the four levels of context.

First step in realist methodology begins by developing initial program theories, which elaborate on how the intervention is anticipated to work. These are then empirically tested to uncover the relationship between the context in which the intervention is implemented, and the mechanisms activated to generate outcomes [30, 42, 43]. In the initial program theory for this analysis, which was formulated prior to our data collection, we hypothesized that if *health visitors conducted pregnancy visits and thereby became familiar with the family and their social situation (C), then they could individualize their breastfeeding support (M), which would make families more likely to follow the breastfeeding advice (O).*

This program theory served as the foundation for our data collection.

## Data collection

We used Pawson and Mazano's three phases of realist interviewing [44] (see Fig. 1). In phase 1 (theory gleaning) we collected most of our field observations, as these constituted the foundation for the reflections used in the focus group and individual interviews. As we became more knowledgeable of program nuances, in phase 2 (theory refinement) our interview questions evolved into

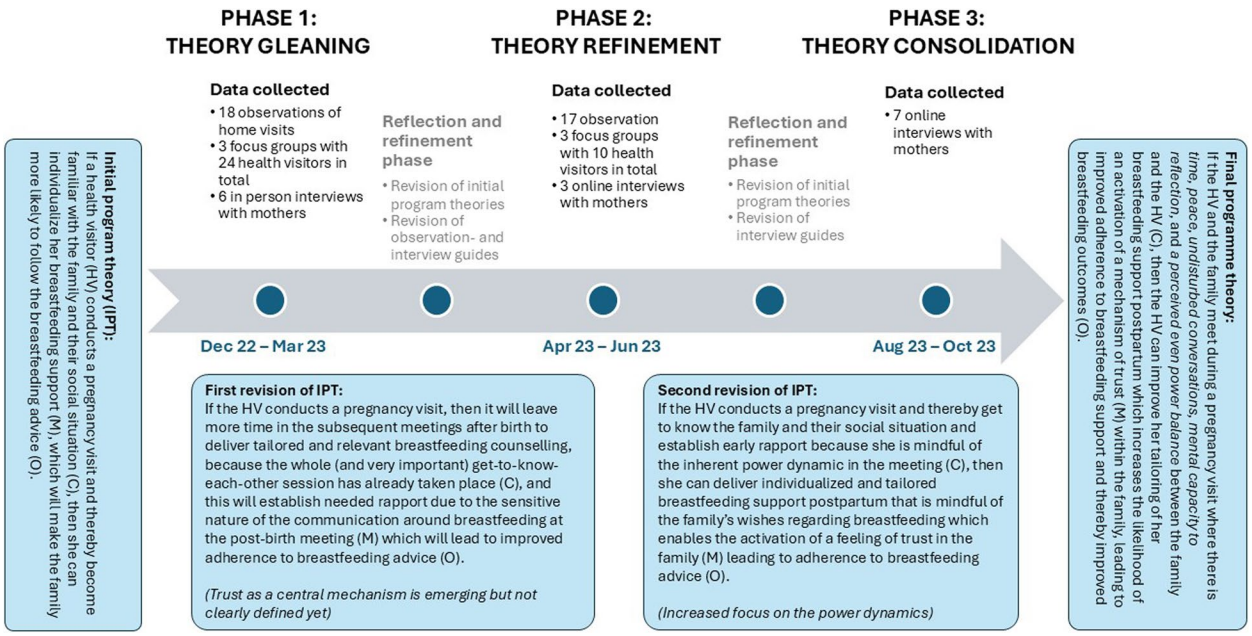


**Fig. 1** Overview of data collection

being less standardized and more tailored and program specific [44]. In phase 2, we identified several candidate program theories and tested their accuracy and pursued further refinement in phase 3 (theory consolidation). The phases were applied in an iterative manner, where insights from prior phases could be used to improve the data collection process in subsequent phases.

#### Participants

The participants included in this study were mothers who received the basic intervention, intensified intervention, health visitors, and two fathers, who coincidentally were home during the interviews.

#### Observations of home visits delivered by the health visitor

Author AKG spent between two and four days at six out of the ten intervention sites and participated in a total of 35 home visits (both pregnancy and early postpartum visits) with the health visitors. Each visit usually lasted a minimum of one hour. In one intervention site they did not offer pregnancy home visits and in another site only to first-time mothers. An observation guide was used and extensive field notes were recorded. The guide focused on relational communication, in particular how rapport and trust was established between the health visitor and the family, and how it affected breastfeeding support. In addition, AKG spent hours in the car with the health visitors between family visits. Field notes from the informal conversations are included in the analysis.

#### Individual interviews with mothers

We interviewed 16 mothers. 11 mothers had received the intensified intervention. Mothers were invited to participate at the end of the home visits. Following a home visit AKG called and arranged the interview. The health visitors did not know exactly who ended up participating in the interviews and the mothers were informed prior to the interview that their health visitor would not receive any information from our conversation or know the exact identity of the included participants. AKG observed one visit from the health visitor for each mother. The interviews were conducted after the observation in their own homes ($n$=6) or online ($n$=10) via Zoom or a telephone call. Two of the included mothers were recruited through snowballing, where participating mothers during interviews mentioned that they knew someone in the intervention group, who would be interested in participating. In these cases, no data from a prior home visit existed. The interview guide was informed by the initial program theories and field notes from the specific observations and focused on the mother's experiences of communication, trust, and relationship with the health visitor (See supplementary file).

Of the 16 mothers who participated in the individual interviews, 11 were first-time mothers. Out of the remaining five mothers who had two or more children, four had encountered breastfeeding difficulties before. The age span of the mothers included ranged from 21 to 34 years of age. They varied in terms of education with some having primary school or vocational training as their highest educational attainment while others had education at or beyond secondary school. Two mothers were still studying at the time of the interview. Four mothers were unemployed prior to maternity leave while the remaining worked as e.g. factory workers, sales personnel, and with communication and HR. All mothers lived with their partners. Four out of the 16 mothers had stopped breastfeeding within the first month after birth.

#### Focus groups with health visitors

We conducted six focus groups locally in the municipalities and the duration was approximately two hours per interview. 34 health visitors participated, all recruited by their leaders. Despite our recommendation of a minimum of four participants per municipality, the size of the focus groups varied from three participating health visitors in one location to 10 participants in another. In some municipalities all employed health visitors participated, while in other sites a selection participated. AKG moderated the focus groups with shifting observants (MHJ, HKR, SFV). See the interview guide in the supplementary file.

#### Data analysis

The process of coding realist data is iterative, cumulative, and explorative – it accepts that reality does not offer uniform answers because of rivalry, meaning that an intervention is expected to produce different outcomes for different people and these differential outcome patterns are important to unfold. We applied a coding strategy suggested by Justin Jagosh that is theory-, concept- and heuristic driven.

- Theory driven: code data according to initial program theories
- Concept driven: code data according to important causal insights
- Heuristic driven: code data according to context-mechanism-outcome configurations

In practice, the following analytical steps were applied: First step entailed going through the transcripts and field notes without an analytical agenda. The purpose was to become immersed in data and to obtain a holistic impression of the data. Second, data were addressed with a focus on identifying segments with relevance to the

initial program theories (theory-driven). At this point the initial program theory was guiding the process, and we started to see that the mechanisms making the families engage with the breastfeeding support were dependent on trust. In this process, especially the most important aspects of context for establishing or undermining trust were taking shape, including the importance of e.g. time and a non-judgmental approach from the health visitor. Third, data were coded with a concept-driven focus, meaning that relevant segments within each transcript that contained information about the causal insights about the program functioning were identified. This step is of particular importance, because it encourages the researcher to be open for analytical insights that were not anticipated or considered when the initial programme theories were developed – this is one of the points where the abductive approach unfolds as it allows for analytical surprises and unforeseen insights. It was during this step that we became aware of the importance of the inherent power dynamic between the health visitor and the family. And fourth, the transcripts were re-addressed with a heuristic driven focus, meaning that segments relevant to generated CMOs were identified and coded. During this phase we applied middle-range theory to unfold our understanding of the appearing CMOs – in particular to understand the reasoning around trust within the mothers. The coding was completed by AKG, SFV, IN and UC in a collaborative and reflexive process overall designed to gain a deeper and more nuanced reading of the data instead of pursuing consensus on meaning [45].

### The abductive research approach and use of middle-range theory: Trust as a central concept

Early in the research process we were surprised to observe how a one-hour home visit during pregnancy led the mothers to proclaim that the health visitor was no longer a stranger to them when they met again postpartum. To aid our understanding of this empirical observation and to unearth the underlying reasoning processes in mothers, we applied middle-range theories about trust in the analysis of mechanisms. Realist methodology uses middle-range theories to explain, unfold and aid our understanding of the connections between empirical data and program theories and configurations [42]. Thus, the purpose of using middle-range theories is to enhance our understanding of the mechanisms generating outcomes and the influence of context and thereby increasing the generalizability of the findings and ensure that we draw on existing knowledge [42, 43].

We draw upon sociologist Luhmann's thoughts of how trust functions as a mechanism to reduce social complexity in the modern Western world. According to Luhmann trust is created in interactions influenced by psychological as well as social structures [33]. This observation is interesting to our analysis as it acknowledges that not only psychological mechanisms are at play when trust or the lack thereof unfolds but also the users' previous health care system experiences. To increase contextual relevance, we further draw upon the work of sociologists Brown and Meyer, who, also through a Luhmannian sociological lense, have investigated specifically how trust, choices and dependency within health care settings manifest and unfold. Brown and Meyers' work is situated within a clinical context examining trust and choice in clinical encounters in secondary care settings. The contextual starting point in our study is the home of the families. Though great differences exist between the clinical encounter and the home visit, we argue that Brown and Meyer's theoretical reflections around trust are still highly relevant, because the underlying mechanisms triggering responses in both patients and new mothers/families can include feelings of uncertainty, vulnerability, overwhelm, powerlessness and a sense of urgency/acuteness.

### Ethical considerations

Ethical approval was obtained from the Research Ethics Committee at University of Copenhagen (Ref: 504-0276/21–5000) and the study is registered with Clinical Trials (NCT05311631). Informed consent, both oral and written, was obtained from all participants. This research adhered to the Declaration of Helsinki.

## Results

### Trust as an essential first step – our central mechanism

> *Interviewer: 'Was it nice to have met her (the health visitor) while you were pregnant?'*
> *Mother: 'Yes, I think so. Because… You know, they come to visit you shortly after giving birth and it feels insanely overwhelming to invite someone inside your home at that point, so for me it was actually nice that she was not a stranger' (first-time mother)*

Across data we observed that the main strength of the pregnancy visit was that it assisted in building early trust between the health visitor and the family. In the quote above a first-time mother described how the health visitor was no longer a stranger to her when they met postpartum because of the pregnancy home visit. We observed how the pregnancy home visit functioned as a prerequisite for the intervention to function and create the intended outcomes. In cases where the intervention proved successful, improved breastfeeding support was evident through an outcome pattern consisting of breastfeeding support tailored to individual families' needs, families reaching out to the health visitor sooner when

they experienced breastfeeding difficulties, and families expressing a more positive experience with breastfeeding.

Using rivalry comparing, we look into cases where the intervention was successful and trust was established, and cases where trust was absent, and the intended outcomes therefore not reached. In the following analysis we investigate the special contextual circumstances surrounding the pregnancy visit compared to an early visit postpartum and hence investigate the importance for the activation of our central mechanism, trust, and our outcome, improved breastfeeding support.

### Central contextual influences

To unfold how and why a one-hour home visit during pregnancy led the mothers to proclaim that the health visitor was no longer a stranger to them and to unearth how the central mechanism of trust was established and maintained, we first turn to a central aspect of any meeting within the health care setting – the inherent power relation. The fundamental power relation between the health visitor and the family constituted a contextual starting point that greatly influenced our further investigation of how the mechanism of trust was established and enacted.

#### *Power relations in the encounter between the health visitor and the family*

In Denmark, the meeting between the health visitor and the family takes place within the family's own home. The health visitor is a guest and through the visit she gets a unique insight into the lived lives of the family. The contextual setting of the home visit alters the traditional clinical encounter where the family would be the one entering the health care domain e.g. at the hospital. However, despite attempts to create a comfortable atmosphere and rapport during the visit, it is apparent in data, that power relations are still at play. The health visitor enters the home of the family with competences and knowledge around newborn care and thriving, that the family needs. She is a guest in the home of the family while she at the same time represents an authority with affiliation to the local municipality who in extreme cases has the power to decide when a child is not receiving the necessary care from its primary caregivers. Across data we observe that mothers express a feeling of dependency on the health visitor to reduce the complexity of having a newborn. In line with Luhmann, trust in the health visitor becomes a tool to reduce complexity. The family's ability to practice choices and trust in the meeting is therefore entangled in a complex interplay between dependency and power relations. Parity functions as a strong contextual factor where experience and a feeling of self-efficacy reduces dependency on the health visitor as expressed by a mother of two below:

> *'The first time I would have liked her to be a little more attentive and to have asked me: "How are you feeling?", "Are you doing alright?", "Is there anything you would like us to talk about?". I felt a bit left alone… And I was an inexperienced first-time mother and didn't know much... But not the second time around. This time I have not felt the same need at all because I know what it is all about now' (mother of two)*

Among first-time mothers we observe a pattern of increased vulnerability and hence dependency as illustrated below where a first-time mother who experienced intense breastfeeding difficulties reflects upon the support she would have liked to receive from her health visitor:

> *'I felt that she treated me like a second or third-time-mother. Like she thought "She knows what she is doing, she has done it before" and stuff like that. And I did not feel that way at all. So, I would have liked her to see me breastfeed and that she had helped us latch because she is a breastfeeding consultant. But when I asked her, she just replied "I am sure you know what you are doing" but I really didn't' (first-time mother)*

Despite not feeling met in her needs and doubts this mother continued to follow the recommendations from her health visitor. Brown and Meyer claim that choice and trust are "*complexly interwoven and structured within power relations*" (34 p. 730). Lack of experience and sometimes also insufficient knowledge as a first-time parent can leave you with little option but to trust.

#### *How the contextual circumstances of the pregnancy visit influenced the interpersonal context*

Across data we observe how the magnitude of the power relations is reduced through the pregnancy visit due to contextual factors that distinguish this visit from an early visit postpartum. One factor is the uninterrupted time and peace to establish rapport because the baby is not yet the center of the conversation which allows for a more focused and undisturbed dialogue between the expecting parents and the health visitor as expressed below by a health visitor:

> *'The pregnancy home visit enables us to bond with and get a sense of the family… And I do not believe that you get the same feeling in an early postpartum visit because there is a baby and a lot of other things that take up mental space' (health visitor)*

The quote further expresses how the parents' mental capacity for reflection during a pregnancy home visit differs from an early visit postpartum "*where a lot of other things are at play*". Another factor that distinguishes the pregnancy visit from an early visit postpartum is the family's perceived ability to practice control over the meeting. As expressed by a first-time mother below, having a newborn is often a lifechanging upheaval and breastfeeding support early postpartum is situated within a setting often characterized by parental feelings of vulnerability, uncertainty and overwhelm. This first-time mother, who did not have the opportunity to meet her health visitor during pregnancy, describes how she spent a lot of energy worrying prior to the first meeting postpartum:

> *Interviewer: 'How did you feel before her (the health visitor) first visit?'*
> *Mother: 'I was nervous, of course you are nervous, because you hear so many things about how you need to do it all. And this is my first child. So, am I doing it right? I think that was why – you are worried about getting told that you do everything wrong' (first-time mother)*

Where the home visit may enhance the opportunity of the health visitor to gain a valuable insight into the lived life of the family, the home visit also creates a pressure on the family to appear in a certain way despite being in a state of overwhelm right after giving birth. This uneven distribution in the ability to exercise control over the situation reinforces the inherent power imbalance and challenges the establishment of trust. The feeling of control of the situation can be viewed as a contextual factor that can either inhibit or enhance the establishment of trust. In contrast, we see in our data that meeting the health visitor during pregnancy at home removes the abovementioned pressure from the families. When asked if it was nice to have met the health visitor prior to birth a young mother of two replies:

> *Mother: 'Yes, it was really nice actually. So that you don't feel, you know, that you have to live up to something…'*
> *Interviewer: 'What do you mean by "live up to something"?'*
> *Mother: 'You know… You feel like: Okay, now I need to be on top of things. And such. Now I can relax and say: Okay, I need help' (mother of two)*

The mother continues to describe how the pregnancy visit and early establishment of rapport resulted in her reaching out to the health visitor before the first planned postpartum visit because she experienced breastfeeding difficulties within the first days after birth:

> *'I don't think I would have called her the day after (the birth) and asked for breastfeeding advice if I had not met her before' (mother of two)*

Thus, by establishing trust prenatally and thereby removing the pressure from the families postpartum, we find that they reach out to their health visitor postpartum when they experience breastfeeding difficulties. By allowing the family to meet the health visitor while they are still capable of practising control over the formal meeting, the family maintains a feeling of self-respect, which evens out parts of the power imbalance and assists in building a more equal relationship between the health visitor and the family.

#### *The families' previous experiences*

Turning to the family and the individual contextual factors, and drawing upon Luhmann, trust requires a degree of choice and thereby agency but also resembles structure in that it reduces complexity in the future [33]. According to Luhmann, to obtain a structuring effect in the future the agency to display trust or distrust – the decision to either behave in a certain way or to hold certain expectations – is profoundly "*embedded within a whole host of events, decisions and structures which have earlier taken place*" [34]. Hence, current choices to trust are constrained by earlier events and decisions and past experiences and hence become a contextual factor that greatly influences how a family enters the meeting with their health visitor. Past experiences pertaining to trust form momentary action because of an embeddedness in an ongoing process rather than a fully conscious one-off decisiveness. In our case, past experiences pertaining to trust in health- or social care providers structure the current encounter with the health visitor. As two intertwined layers, the welfare state context structures the context of the family and the dynamics through which the family can choose to trust the health visitor. The following passage from an interview with a second-time mother, who previously had been sick with severe depression illustrates how a former experience with the system affected her expectations. When asked about her expectations towards meeting her new health visitor the mother replied:

> *'… it is not someone I know-know, so perhaps I need to be careful with opening up, because if I come clean, will she use it against me? I do not know. The thought has sometimes crossed my mind. That I need to be careful with what I say because could she use it against me… or does she actually want to help me? You do not know them that well, do you?' (mother of two)*

The mother continues with reflections about why distrust automatically is a starting point for her:

> *'I don't know, maybe you are afraid to say everything. Tell everything. That was the feeling I was left with the first time, but not the second time around. Now I am like "you know what, don't you dare come take my kids"... I have been on sick leave with depression before. So maybe they are watching me more closely. Yes, they monitor you in a way. "Does she know how to be a mother?", "Can she take care of her kids after she has been sick even if she is not on medication or anything and is functioning normally now?"' (mother of two)*

Her past experiences with the social system and previous feeling of being monitored shape how this mother enters the meeting with her new health visitor. Distrust, based on past experiences, becomes a structuring factor for her current behavior and a contextual factor that greatly influences the activation of a mechanism of trust.

#### CMO – bringing parts together to investigate when and how the intervention was successful

We now turn to unearth and investigate our central mechanism, trust, and the interconnectedness of our mechanism (trust), our outcome (improved breastfeeding support) and selected contextual factors through dissecting empirical situations where the intervention (in this case the pregnancy home visit) was either successful (trust was established) or unsuccessful (distrust occurred).

##### *Successful establishment of trust*

Numerous reasons for and characteristics of a trustful relationship with the health visitor were pointed out by the participating mothers. Generally, and roughly categorized, the mothers in vulnerable positions, who perceived the health visitor as a potential threat due to the inherent authoritative power imbalance highlighted the importance of confidentiality when it came to trust. A mother of two expressed that to trust her health visitor, she needed confidentiality:

> *'That you can rely on and trust that what you tell her will stay between the two of you' (mother of two)*

Mothers, for whom the power imbalance was not a major concern, described how the health visitor's self-presentation and professional experience and knowledge was important. A striking tendency across cases with insecure/worried mothers or mothers with previously bad experiences with the health care system was the general fear of being judged by the health visitor. To them a trusting relationship was formed through the health visitor's non-judgmental and supportive approach with genuine praise and encouragement. When asked why this mother of three, who earlier was a young mother alone with two kids, characterizes her relationship with the health visitor as trustful, she replied:

> *'It may sound stupid but back when I became a single mom… It was damn difficult to keep a full-time job, take care of the kids, and everything… So she has seen me at my worst. And even then, she didn't judge me. I think that is how I feel. Because I feared that someone would mark me as a bad mother. That is why I kept my full-time job, the house, the car and the garden… Everything looked nice. You know. All that. It was extremely important to me. I totally forgot myself in the process' (mother of three)*

The same mother, who previously had two failed attempts at establishing breastfeeding, continues to explain how her current health visitor through genuine praise and encouragement increased her self-efficacy related to breastfeeding:

> *'The support and the "Come on, you are doing it right!". That is what is in my head when she (the health visitor) says: "You are doing great with breastfeeding" then it is because we indeed are doing great with breastfeeding' (mother of three)*

Besides confidentiality, professional experience, a secure self-presentation and a non-judgmental and supportive approach, across cases mothers described how trust in the health visitor was strongly aligned with her ability to focus on what was actually important to the family – her ability to tailor her support to the individualized needs of the family was of major importance for the establishment of trust whether it being ignoring the messiness of the home and instead focusing only on the kids, recognizing that the grandmother was an important part of the mother's life and a source of support, or accepting a home with animals as expressed by a first-time mother below:

> *'We feared that she would comment negatively on the fact that we have cats because they have their own mentality, but she didn't say anything. So, we have a great relationship so far' (first-time mother)*

To practice tailoring, a distinctive feature regarding the health visitor's approach to the families was evident: she had to approach the family in a calm way and decode their needs before introducing her own agenda, as expressed in the quote below, where a distrustful and previously depressed mother who despite having concerns about the forthcoming collaboration with the new

health visitor postpartum, ended up with a very trustful relationship. When asked what her health visitor had done to establish a trustful relationship between them, the mother replied:

> *'... it is probably about trust in the health visitor. The way they approach you. You know, quietly and peacefully, they sit down and observe who you are rather than leaving you with a feeling of being taken aback. There are too many emotions at stake when you have a newborn... I think sometimes you feel taken aback in your own home. Monitored. I don't know. I did, at least the first time around' (mother of two)*

The health visitors expressed that the conditions for the decoding and tailoring process are more advantageous during the pregnancy visit compared to the early visits postpartum. When asked what is special about the pregnancy visit compared to visits postpartum a health visitor replied:

> *'The pregnancy visit provides you with that trustful relationship, which makes it easier when you visit next and there is a baby. Then the guard has been lowered and we can skip the politeness and icebreakers and instead dive straight into the important stuff... I think it is the most important visit. Really, a solid foundation' (health visitor)*

One health visitor equated the pregnancy visit to getting *'a head start'* and as a way to *'kickstart the relationship formation with the family'*. By meeting prior to birth, the health visitor can form an early impression of the family and their social situation and thereby tailor her subsequent support to meet their individualized needs and preferences. Tailoring is enabled because the family is usually not yet in a chaotic and overwhelmed state compared to right after birth and the health visitor can therefore obtain a more nuanced insight into the family's social situation, their strengths and weaknesses, as expressed by a health visitor below:

> *'Their strengths and weaknesses stand out more clearly during the pregnancy visit, because once the baby is there, it is like they forget everything about themselves' (health visitor)*

The process of tailoring their breastfeeding support also entails a strong sensitivity towards the family's prior experiences with breastfeeding or expectations and wishes regarding breastfeeding among first-time parents. Health visitors point to that knowledge hereof is difficult to obtain during the early visits postpartum because the parents are usually exhausted and perhaps in pain after giving birth. The pregnancy visit and the tailored breastfeeding support early postpartum become important also among mothers with previous negative breastfeeding experiences as illustrated in the quote below:

> *'It (the pregnancy visit) gives you a good opportunity to correct their previous breastfeeding stories. If they have had bad breastfeeding experiences in the past, maybe because there was not sufficient milk... Together we can figure out what the problem actually was. So they become better prepared' (health visitor)*

Tailoring related to previous experiences with breastfeeding or breastfeeding expectations are about correction of causal explanations of breastfeeding difficulties, breastfeeding preparation in terms of validated evidence, and perhaps most importantly tracking down how important breastfeeding is to the family. By identifying the family's perceived importance of breastfeeding the health visitor can tailor her subsequent support to meet their needs and avoid situations where the family feels pressured into breastfeeding as expressed by a health visitor below:

> *'Then there is something in relation to what is my role going to be here. How far should I go to support and push you, right' (health visitor)*

Obtaining clarification about breastfeeding wishes and expectation alignment in relation to breastfeeding support prior to birth (how do you prefer I support you if breastfeeding challenges occur?) is extremely important given the aforementioned power imbalance between the health visitor and the family. The pregnancy visit allows for alignment and clarification of expectations which strongly enhances the trust between the health visitor and the family and prevents situations where a family feels pressured into breastfeeding.

#### *When trust is not established*

We now turn to look at cases where the intervention failed to establish a trustful relationship and therefore did not reach the outcome of improved breastfeeding support. Several contextual factors influenced the activation of a mechanism of trust.

*Handling distrust* The inherent need to overcome complexity and contingency, which is highly evident in our contextual setting of new parents, does not mean that trust can be taken for granted [33, 34]. As noted by Luhmann, distrust can also reduce complexity but this approach is more demanding and involves significant doubts and anxiety [33]. One mother describes how she felt very alone in her uncertainty because she could not share her worries with her health visitor. In cases where

trust is not established during the pregnancy visit and the relationship between the health visitor and the family is challenged throughout the subsequent visits postpartum, we observe across data that certain commonalities are repeated. The following three factors relate to how the health visitor approaches the family. First, instead of feeling supported in their transition into parenthood, the mothers felt patronized. A first-time mother explains how she felt before the home visit:

> *'Generally, I have had the feeling of "Oh, I wonder what she will tell me I have done wrong this time"' (first-time mother)*

Second, across data mothers explain how the health visitor failed to address or neglected the issues most important to the family. A second-time mother expresses below how she had previously asked for a replacement of a health visitor, because she focused on the tidiness of the home instead of the thriving of her child:

> *'Yes, one was replaced because she didn't understand that she was here to look at the kids. She stuck her nose in everything else. How my house looked... If something was not neat enough for her… Well, it is not my house, but my kids you are supposed to focus on' (mother of two)*

By focusing on the tidiness of the home, the health visitor failed to address the family's most pertinent issue. Instead, her approach was perceived as a form of social pressure, and it became a contextual factor that limited her possibility for activating a mechanism of trust. This factor of neglect and failed attempt at addressing the needs of the family was highly correlated with a feeling of being dismissed by the health visitor; a feeling permeating data when the health visitor used expressions like "*this is what it is like to have a child*" or as illustrated below, where the health visitor's encouragement was not aligned with the mother's painful experience of breastfeeding:

> *'But I told her that it really hurt and was extremely painful every time I had to breastfeed… Maybe I felt that I needed her to take me seriously when I said that this was something I was very worried about. She was just like "It will be alright" but it really bothered and affected me' (first-time mother)*

Third, we observed a pattern of mismatch between offering dated recommendations and new knowledge. Using statements such as '*when I had my kids 20 years ago*' gave rise to resistance in the mothers. Across data we observed that these factors contributed to increased distrust in the health visitor. However, in line with Brown and Meyer's analysis, we noted how distrust in the health visitor seldom led to an exit of the voluntary health visiting program or even to voicing of frustrations. Instead, mothers remained silent, despite distrust giving rise to heightened vulnerability and anxiety among the mothers. When asked if she had considered exiting the program, a first-time mother replied:

> *'No, I don't really think I considered it an option. I think I am a little afraid of conflict and then I thought I will just let it go in one ear and out the other' (first-time mother)*

When distrust occurs mothers can respond by either exit, voice of concern or (obliged) loyalty as demonstrated above. Brown and Meyer show in their analysis how a range of socio-economic and psycho-social factors intersect in shaping the extent to which choices to trust are enacted. If a mother chooses to exit the health visiting program because of distrust, she is often dependent on certain economic capital in order to consult alternative private offers or social capital in terms of a well-developed network who can offer advice to reduce the complexity around having a newborn – the mothers can afford not to trust. Consequently, mothers with less economic, cultural, knowledge and/or social capital may be in a situation of forced option to trust or obliged loyalty. Our analysis points to a different form of capital that greatly influences the extent to which new mothers feel a forced option to trust the health visitor. If a mother displays great uncertainty then she is more likely to exhibit obliged loyalty, because her mental well-being depends on the health visitor's ability to reduce the complexity around having a newborn.

According to Brown and Meyer the (obliged) loyal and distrusting constitute a vulnerable group. They do not voice their concerns – instead they appear to follow the recommendations and they say what the health visitors want to hear. Once she is out the door, they will find other solutions more compatible with their social situation and beliefs or end up overwhelmed by anxiety and doubts. These observations are important because they shed light on a group of mothers in a vulnerable position characterized by a high level of anxiety who appeared invisible because they seemingly appeared to be receptive to the recommendations provided by the health visitor. At the same time, the choice to stay loyal while also experiencing distrust, was also present as a sign of agency among mothers, who were able to navigate and select from the advice and support provided as illustrated here where a mother despite distrust accepts that the health visitor performs physical checkups of her daughter:

*'Then she can measure and weigh my child. And you know, focus on the mere physical aspects...' (first-time mother)*

## Discussion

### Main findings

Through the data a clear pattern emerged: if trust was built during the pregnancy visit, then the breastfeeding support after birth was enhanced. In realist terms, the primary mechanism of change - the establishment of trust - had optimal conditions for success in the circumstances of the pregnancy visit. These circumstances include a calm environment, uninterrupted conversations, the mental capacity for reflection, and the enablement of a more balanced power dynamic between the family and the health visitor, all of which were of importance for the outcome. The breastfeeding support became tailored and the families reported reaching out to the health visitor when needed between the visits and a more positive breastfeeding experience. Importantly, this mechanism was also active among mothers of lower socioeconomic positions. The analysis shows that trust was enhanced when the visit was characterized by confidentiality, professionalism, a non-judgmental and supportive approach, sensitivity towards the family's prior experiences and wishes regarding breastfeeding, and attention to what is important to the family. Conversely, trust was hindered by a patronizing attitude, failure to address issues important to the family, making the family feel dismissed, and a mismatch between outdated recommendations and new knowledge.

Our findings are in line with previous research showing that prenatal breastfeeding support boosts maternal confidence and fosters a positive attitude towards breastfeeding [15]. Further, we elaborate the previous finding of the importance of the family-healthcare provider relationship in breastfeeding [24], as we highlight the prenatal encounter as a key factor in strengthening this bond. Importantly, women with short education and young age, who are at an increased risk of not meeting their breastfeeding goals [8], have been found to require more tailored breastfeeding support [24]. The pregnancy home visit therefore seems to hold promise to increase breastfeeding among women in vulnerable positions and thus to address the persisting social inequality in breastfeeding. Moreover, the enhanced trust and rapport fostered by the pregnancy home visit has the potential to not only advance breastfeeding, but also advance the broader health promotion objectives of the visiting program, suggesting it to be an impactful investment.

Realist evaluations often encompass multiple CMOs. However, in our study, the pregnancy home visit triggered a range of other mechanisms, all contingent upon the establishment of trust. Therefore, we opted for a more focused and in-depth analysis. By applying middle-range theories about trust, we have illuminated and unfolded how a single mechanism of trust between the family and the health professional is developed and maintained. Shearn et al. highlight the challenge of choosing appropriate abstract theories from a vast body of options [30], however in the present study our abductive approach - where learnings in the field shaped our focus of the study - we searched for theory to illuminate the structuring processes of being able to trust, as families' previous experiences with the health care system and welfare institutions were so apparent in the empirical material. Using other theoretical lenses could have led us to investigate the individual psychological aspects of trust and relationship formation, but such models typically do not capture the processes of importance to social inequality in health. Our work contributes to the theoretical work around trust by expanding Luhmann's and Brown and Meyers' thoughts with reflections about the influence of the four levels of context suggested by Pawson et al. [41] in a specific intervention including socially vulnerable families. Thus, the power dynamics inherent in health encounters were illustrated by the interpersonal interaction between the health visitor and the families, which was also related to the institutional and infrastructural levels of the visiting program. By approaching the individual contextual level of the family structured by the institutional and infrastructural levels, we showed how the families' prior experiences with the health care system and welfare authorities were a pivotal element in building trust between health care providers and the families. Consequently, to reduce social inequality in health this key mechanism of trust can only be understood by including the structural layer of context in the analysis.

### Methodological considerations (strengths and weaknesses)

One limitation is that the health visitors decided in which families, the field observations should take place, possibly introducing selection bias into the study. However, our study with the combination of field observations with subsequent maternal interviews (except for in two cases) limited the importance of the potential bias, as we reflectively combined the materials and could ask mothers directly about their experiences with the visiting nurse. Potentially, the mothers could hold back negative perspectives about their health visitor, due to social desirability bias, however the data were rich in mixed experiences and details. Furthermore, the research team suggested the dates for the field visits, meaning that the selection of families was largely based on the health visitor's calendar and not election. The

two mothers included by snowballing could have been individuals with special interest in breastfeeding and breastfeeding support, with either specifically positive or negative perceptions or experiences. Including them puts extra emphasis on the need for the researchers to be reflective and take on a critical stance to the data. However, such individuals can also be considered valuable informants, as their passionate perceptions generate rich data [46].

In the development and refinement of program theories, we applied a stepwise approach (from theory gleaning, to refinement and consolidation) to data collection [44, 47], which allowed for learnings in the field to actively shape the data collection process and create awareness and transparency about how our knowledge evolved. Despite the stepwise approach, we actively sought to maintain an iterative process. Overall, the structured and analytical approach strengthened the study's credibility and trustworthiness.

## Conclusion

The circumstances of the pregnancy home visit enhanced the likelihood of establishment of trust between the health visitor and the family, thereby strengthening the breastfeeding support and experiences. This mechanism was activated across all socioeconomic groups, indicating the potential of the pregnancy home visit to promote breastfeeding among women in vulnerable positions and mitigate social inequality in breastfeeding.

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**Authors' contributions**
AKG primarily collected all data with support from HKR, MHJ and SFV during focus groups. AKG, SFV, UC and IN analyzed and interpreted data. AKG wrote the main manuscript with assistance from SFV. All authors have provided feedback and suggestions for revisions during the writing process. All authors read and approved the final manuscript.

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**Data availability**
The data that support the findings of this study are available from University of Copenhagen (Section of Social Medicine), but restrictions apply to the availability of these data, which were used under license for the current study and so are not publicly available due to individual privacy considerations of the included study participants.

## Declarations

**Ethics approval and consent to participate**
Ethical approval was obtained from the Research Ethics Committee at University of Copenhagen (Ref: 504-0276/21-5000) and the study is registered with Clinical Trials (NCT05311631). Informed consent, both oral and written, was obtained from all participants.

**Consent for publication**
Not applicable.

**Competing interests**
The authors declare no competing interests.

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## Publisher's Note