Gender Blindness by Design

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Abstract

Digital health technologies increasingly mediate the everyday management of chronic conditions, promising personalised, data-driven, and empowering forms of care. However, these systems do not emerge as neutral tools. They inherit assumptions from long-standing biomedical paradigms that privilege standardised and implicitly male physiological norms. While gender bias in healthcare has been partly examined at the level of clinical protocols and datasets, the role of interaction design in avoiding gender blindness remains underexplored. This paper explores how gender-indifferent interaction design shapes daily care practices through a qualitative study of Continuous Glucose Monitoring (CGM) systems used in diabetes management. Drawing on a feminist new materialist perspective, we conceptualise digital health technologies as active participants in care practices that co-produce meanings, responsibilities, and agential capacities through their affordances. Empirically, the study combines a series of research activities including embodied autoethnography, semi-structured interviews, and cultural probes with people living with diabetes. Our findings show that CGM systems often function as "silent companions": while continuously present on the body, they provide limited contextual or interpretive support. Fixed thresholds, standardised visualisations, and non-communicative interaction patterns displace the work of sense-making onto users. This burden is unevenly distributed, particularly affecting women and girls experiencing hormonal variability, which remains invisible in CGM interaction logic despite its clinical relevance. As a result, users perform additional cognitive, emotional, and relational labour to interpret data, justify bodily fluctuations, and manage social expectations. We argue that gender blindness in digital health is materially enacted through interaction design choices, not only through data or representation. By reframing gender bias as an interactional problem, this paper contributes to Interactive Health research by highlighting how design decisions redistribute care labour and shape lived experiences of chronic care beyond measures of usability or clinical accuracy.

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CCS Concepts

• **Human-centered computing** → Interaction design; Empirical studies in interaction design; • ; • **Applied computing** → Life and medical sciences; Health care information systems;

Keywords

Gender blindness, Digital health, Care through Design, Feminist HCI, Diabetes

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1 INTRODUCTION

Digital health technologies increasingly function as core infrastructures for managing chronic conditions, promising greater autonomy, personalisation, and efficiency in everyday care. Wearable sensors, mobile applications, and data-driven monitoring systems are now deeply embedded in how people understand their bodies, make therapeutic decisions, and coordinate with clinicians. Within Interactive Health and HCI research, these technologies are often framed not as neutral tools that support self-management through continuous feedback and data access [1, 2].

However, digital health technologies do not emerge in isolation. They inherit assumptions from long-standing biomedical paradigms that have historically privileged male bodies and standardised physiological norms [3]. While much critical attention has been paid to bias in medical data and clinical protocols, less attention has been given to the role of interaction design itself in sustaining gender blindness in healthcare. Interface logics, feedback mechanisms, thresholds, and modes of communication are not neutral; they actively shape how bodies are interpreted, which forms of variability are recognised, and who is expected to adapt when systems fall short.

This paper addresses this gap by examining Continuous Glucose Monitoring (CGM) systems used by people living with diabetes as a paradigmatic case as a critical site for investigating how gender-indifferent interaction design manifests in practice [4]. To analyse these dynamics, the paper adopts a feminist new materialist perspective, which challenges human-centred and dualistic perspectives by understanding agency as relational and emergent through interactions between human and non-human actors [5]. Within this view, technologies, bodies, and data are not passive elements but active participants in shaping care practices and power relations. Considering this, the central research question guiding this work is:

How does gender-indifferent interaction design in chronic condition management technologies manifest in and shape daily care practices?

This question is addressed through a situated, qualitative analysis that does not aim to provide an exhaustive account of all interaction effects, but rather to surface how these dynamics emerge in practice.

This paper makes two contributions to Interactive Health research: (1) it reframes gender bias in digital health as an interaction design problem rather than solely an issue of representation or access; (2) it provides an in-depth qualitative account of how CGM interaction design redistributes care labour, particularly in relation to bodily variability and hormonal fluctuations.

2 BACKGROUND

2.1 The relationship between male-dominated medicine and the digital health heritance

Contemporary healthcare systems are rooted in a long-standing biomedical paradigm that has historically privileged male bodies as the normative reference for diagnosis, treatment, and clinical research. A substantial body of scholarship has shown that medical knowledge and healthcare practices have largely been developed around male bodies, symptoms, and physiological norms [6–9]. This bias is reinforced by cultural assumptions such as hegemonic masculinity and andronormativity, which position male bodies as the default standard [10].

These cultural assumptions intersect with the historical exclusion of women from clinical research. As documented by McGregor [11], women were frequently excluded from experimental protocols because their reproductive capacity was perceived as increasing the cost, complexity, and risk of clinical trials. Consequently, women's health has long been characterised as "understudied, underdiagnosed, and undertreated," with diagnostic criteria and treatment protocols calibrated primarily on male-pattern data [11].

This historical trajectory has contributed to the emergence of gender bias in healthcare, defined as "the difference in the management of men and women with the same clinical diagnosis, which may have positive, negative, or neutral health consequences" [12]. Closely related to this is the notion of gender blindness, defined as the "non-awareness of the fact that a great deal of medical knowledge is based on research performed in men" [10].

Empirical evidence documents the impact of gender blindness in multiple clinical domains, including pain management [13], drug administration and pharmacological treatment [14, 15], cardiovascular disease care [16], mental health care [17] and emergency care [11, 18]. Together, these studies demonstrate that gender bias is not an abstract or historical issue, but a persistent structural condition that continues to shape healthcare practices and outcomes.

Gender disparities in healthcare extend beyond the male–female binary and often affect people with intersex variance more acutely. Individuals with intersex variance may be subjected to biomedical interventions, including hormonal treatments or surgery, because of deeply embedded binary sex norms in medical practice [19]. However, it remains unclear to what extent these experiences have been examined through the lens of gender blindness. While scholarship documents the harms of binary classifications, pathologising language, and non-consensual interventions [20, 21], intersex experiences are rarely framed as symptomatic of broader gender-indifferent epistemologies and instead remain analytically marginal.

Meanwhile, digital health technologies are increasingly embedded in everyday healthcare practices [2], particularly in the management of chronic conditions [22]. Devices such as wearable sensors, mobile health applications, and data-driven monitoring systems are now central to how people understand their bodies, make care decisions, and coordinate with clinicians.

Even if the rapid digitalisation of healthcare has been promoted as a pathway to greater equity and access [23], evidence suggests that gendered inequalities persist—and in some cases intensify [24]—within digital health contexts. Indeed, digital health technologies do not emerge independently from this male-dominated paradigm as they inherit and operationalise existing biomedical assumptions through data models, algorithms, and interaction design, often privileging standardised and implicitly male physiological baselines [25].

We argue that this inheritance of bias is particularly consequential in the management of chronic conditions, where digital technologies mediate everyday practices over long periods of time. Chronic care requires sustained interaction, interpretation of fluctuating data, and continuous alignment between bodily experience and technological feedback.

2.2 Gender, Interaction and Health in HCI

The nature and consequences of interaction with digital health technologies are not experienced uniformly across genders.

Several studies have documented measurable differences in how men and women engage with healthcare platforms, including interaction time, task completion, error rates, feature preferences, and satisfaction [3]. These findings risk reinforcing gender as a fixed user attribute, rather than interrogating how interaction design itself participates in producing these differences. Similarly, research on the aesthetic design of digital health wearables has shown how form, colour, and materiality influence adoption and engagement in gendered ways [26, 27]. More recent work has attempted to move beyond demographic framings by positioning gender as an active design variable that shapes interaction behaviour, emotional response, and digital trust. Abdullah [28], for example, argues that gender-aware UX design can function not only as an ethical intervention but also as a performance driver, reporting significantly higher retention rates and perceived value in gender-sensitive HealthTech applications. While these findings demonstrate the importance of a gender-based approach in design, they also reflect a tendency to frame gender awareness primarily in terms of optimisation and market performance, leaving unexamined the structural conditions through which gendered interaction burdens are produced.

The rapid growth of FemTech - female health technology - further illustrates both the potential and the limitations of gender-focused approaches. While these technologies have brought overdue attention to gendered health experiences, they frequently reduce women's bodies to reproductive functions. As Tripaldi [29] argues, gendered technologies frequently operate "on and through women's bodies," promising empowerment while simultaneously introducing new forms of surveillance, control, and responsibility.

This ambivalence reflects a broader tension in digital health: empowerment narratives can obscure how care labour is redistributed. Although digital technologies may enable self-knowledge and monitoring, they also intensify expectations of self-regulation and individual responsibility. As Lupton [30] notes, these agential capacities are shaped by sociotechnical arrangements that determine who must interpret data and manage uncertainty. Similarly, Hendl and Jansky [31] show how dominant FemTech narratives—self-knowledge, self-management, and self-optimisation—tends to privilege algorithmic knowledge over embodied experience, aligning with neoliberal logics that individualise responsibility while leaving structural inequalities intact.

This body of work demonstrates that within design research it is needed to address gender beyond surface-level adaptations.

Within design research, this points to the need to address gender beyond surface-level adaptations. Persistent limitations have been linked to the historical exclusion of women from design processes, resulting in stereotypical and non-functional outcomes [32]. Yet even participatory design approaches can reproduce narrow understandings of gender, often relying on binary categories and normative user profiles [33]. As a result, not only women but also intersex and gender-diverse individuals remain marginalised, with their embodied experiences insufficiently accounted for in interaction design.

Although gender is increasingly recognised within HCI and Interactive Health research, existing work remains fragmented. Gender is often treated as a demographic variable or confined to specific domains, with limited attention to the diversity of embodied identities—highlighting the need for a more intersectional perspective [34]. Consequently, digital health design continues to operate largely within a gender-indifference paradigm, where gender is undertheorised and its interactional implications remain insufficiently examined. Even when considered, gender is frequently equated with women alone, leaving unexplored how interaction design redistributes cognitive, emotional, and care labour across differently gendered bodies.

2.3 Feminist New Materialism as an Interaction Lens

Recent work in HCI and interaction design shows a rising interest in feminist-informed practices in the context of women's health, though these efforts vary in scope and depth [35–37]. Thanks to feminist studies we can introduce the concept of health technologies as socio-technical systems.

The incorporation of feminist epistemologies into social computing is often traced back to the mid-2000s, when scholars such as Bardzell [5] aligned these perspectives with the rise of third-wave HCI. Bardzell's feminist interaction design framework foregrounds interaction as a relational, embodied, and situated process rather than a neutral exchange between user and system. Central to this approach is a rejection of universalising design perspectives in favour of pluralism, recognising that technologies are always experienced differently across bodies and social positions. Embodiment is treated as integral to interaction, with technologies engaging not only cognition but also sensing, affect, and lived bodily experience. Bardzell further extends interaction beyond individual artefacts through an ecological lens, emphasizing how technologies acquire meaning within broader sociotechnical assemblages of practices, institutions, and norms. Finally, through self-disclosure, interactive systems can reveal how they shape users' subjectivities, inviting critical reflection on the values and assumptions embedded in design. Together, these qualities position interaction design as a practice in which agency and meaning emerge through ongoing human–technology entanglements, anticipating key concerns of feminist new materialist thought.

Bardzell's framework reasons with the feminist new materialism turn we are witnessing. Feminist new materialism is a theoretical perspective that challenges human-centred and dualistic understandings of agency, knowledge, and interaction. The approach emerged at the intersection of feminist theory, science and technology studies, and post-humanist thought and claims that:

- The human subject is unstable and emergent, not autonomous or bounded [38].
- Agency arises through intra-actions [39, 40] between human and non-human actors [41, 42].
- Matter (devices, data, spaces, bodies) has agential capacity ("thing-power") [39, 43].
- Power is productive as well as constraining, enacted within assemblages rather than possessed by individuals [38].

From this perspective, digital health technologies do not simply act on users; instead, health practices and identities emerge through entanglements of bodies, data, devices, environments, institutions, and discourses.

However, even if the feminist new materialism is a valid lens to understand digital health, Lupton (2019) highlights that it lacks practical application and methodological as well as guiding principles that can orient qualitative research. To this aim, the author developed the following set of questions to guide the researcher, positioned as part of the research assemblage, acknowledging that analysis is always partial and shaped by specific "agential cuts" [38]:

- What human and non-human actors are involved?
- What affective forces and relational connections are generated?
- What kinds of agency, control, resistance, or vulnerability emerge?
- How do technologies enable or constrain possibilities for action?

To move beyond both gender indifference and reductive gender-specific solutions, this paper draws on feminist new materialist theory.

From this perspective, first we assume that digital health technologies are not neutral intermediaries but active participants in care practices, co-constituting how health, illness, and bodies are understood and managed. Interfaces, sensors, data visualisations, and algorithms generate agential capacities through their affordances, in relation to the affordances of human bodies, including sensory perception, embodied expertise, emotional responsiveness, and the capacity to learn and adapt over time [44]. Crucially, these capacities do not reside in either humans or technologies alone but emerge through relational and affective engagements within human–nonhuman assemblages. Design features of digital systems

enable certain actions while constraining others, while bodily states, emotions, and prior experiences shape how these possibilities are taken up or resisted [45].

Secondly, gender, in this view, is not a fixed attribute that users bring to interaction, but an emergent and dynamic property of these sociotechnical configurations, produced through ongoing interactions among bodies, technologies, norms, and affects.

Within Interactive Health research, this framing offers a way to analyse how interaction design choices materialise gendered assumptions and redistribute care labour. It also provides a theoretical foundation for examining chronic care technologies not only in terms of usability or efficiency, but in terms of how they shape everyday negotiations between bodies, data, and responsibilities. This perspective underpins the empirical investigation presented in the following sections.

3 RESEARCH DESIGN AND METHODOLOGY

3.1 Research focus and question

This study focuses on gender-aware interaction design in the context of chronic condition management, with particular attention to how everyday engagements with digital health technologies are shaped by gendered assumptions embedded in design. The central research question guiding this work is: *How does gender-indifferent interaction design in chronic condition management technologies manifest in and shape daily care practices?*

To address this question, the paper investigates a paradigmatic case of digital health technology: Continuous Glucose Monitoring (CGM) systems used by people living with Type 1 diabetes. CGM systems are widely adopted tools that support continuous self-monitoring, data interpretation, and decision-making in everyday life. They are often presented as neutral and universally applicable technologies, designed to optimize metabolic control through real-time data feedback.

However, precisely because CGM systems are deeply embedded in daily routines and require sustained interaction, they offer a critical lens for examining how gender-indifferent design manifests in practice. CGM technologies mediate how bodily fluctuations are sensed, represented, and acted upon, shaping users' responsibilities and relationships with care infrastructures. As such, they provide a valuable site for exploring how gendered bodies, technologies, and care practices become entangled in chronic condition management.

Following Lupton [30], the analysis adopts a feminist new materialist perspective that examines how agential capacities emerge through relations between human and non-human actors, affective forces, and the affordances of digital health technologies, positioning gender as an emergent property of these interactions.

3.2 Case study

According to the International Diabetes Federation [46], approximately 589 million adults worldwide currently live with diabetes, a number projected to rise to nearly 853 million by 2050 if current trends continue. Diabetes is a chronic metabolic condition characterised by impaired insulin production or use, resulting in disrupted blood glucose regulation [47]. As a lifelong condition, it is largely self-managed, with individuals responsible for up to 95% of daily care activities, including monitoring glucose levels, administering insulin, and responding to glycaemic fluctuations [18, 19].

These practices increasingly rely on digital monitoring technologies. Continuous Glucose Monitoring (CGM) systems exemplify a paradigm of "caring through data" [50, 51], enabling continuous biosensing and real-time feedback via wearable sensors connected to apps or display devices. Beyond providing information, CGMs reshape therapeutic decision-making by supporting ongoing micro-adjustments in everyday life. However, this constant interaction also introduces new demands, including managing alarms, bodily discomfort, technical issues, and the socio-emotional implications of continuous connectivity [52].

A growing body of research highlights gendered patterns in diabetes management, even when not explicitly framed through gender blindness. Studies show differences in coping strategies, psychosocial burden, and daily care practices, with women often reporting higher levels of distress [53]. Gendered meanings also shape both self-management behaviours and clinical interpretations [54], alongside differences in clinical engagement, glycaemic control, and treatment outcomes [55, 56].

Despite this evidence, there is a notable absence of work that explicitly examines these disparities through the lens of gender blindness. Little work examines how gender-indifferent assumptions are embedded in CGM systems and how they mediate everyday interaction, responsibility, and care practices in chronic condition management.

3.3 Research methods

The study was conducted over a six-month period in collaboration with the Patient Experience Observatory of Hospital Clínic Barcelona (Spain), with the involvement of the diabetology team. The research adopted a qualitative, experience-centred approach to explore everyday interactions with monitoring technologies with Continuous Glucose Monitoring (CGM) systems. Rather than aiming for generalisable claims, this study provides an in-depth, situated account of interaction dynamics, foregrounding how gender-indifferent design is enacted in everyday care practices. The research has been informed by six different activities (Fig. 1).

Among these, embodied autoethnography and semi-structured interviews combined with cultural probes constituted the primary sources of insight, as they enabled in-depth exploration of lived, affective, and situated care practices.

- Embodied autoethnography

The second activity employed an autoethnographic method, adopting an embodied approach to better grasp the experiential dimension of CGM use. This choice stemmed from the method's potential to systematically and intentionally map uncovered individual experiences and larger social or cultural dynamics through self-observation and self-reflection [4, 57], while acknowledging the researcher's bodily responses—sensations, discomfort, awareness—are legitimate sources of knowledge and as part of the sociotechnical assemblage under investigation [44, 52, 59]. For one month, one member of the research team wore a fully functioning CGM device, monitoring her blood glucose levels through the manufacturer's mobile app. To support this experience, a printed daily diary

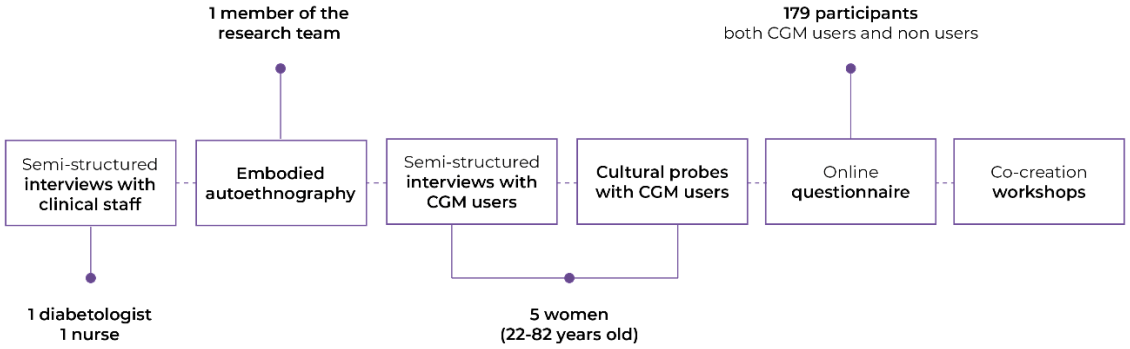

Figure 1: Overview of research activities

has been designed as a boundary object to structure and record observations (Fig. 2).

- Semi-structured interviews and cultural probes with people living with diabetes.

To complement and extend the autoethnographic insights, semi-structured interviews were conducted with people living with diabetes to explore their everyday experiences with monitoring technologies. Among twenty patients invited to participate, five women aged between 22 and 82 took part in the research. After obtaining participants' written informed consent, in compliance with applicable ethical standards governing human subjects research, each interview lasted approximately one hour and involved two researchers. Interviews followed a two-phase structure: an initial open-ended conversation encouraged participants to share personal narratives of living with diabetes and interacting with monitoring devices, followed by a reflective exercise using 16 visual scenarios depicting everyday situations involving CGM use. These neutral, non-prescriptive illustrations functioned as boundary objects, enabling indirect discussion of sensitive issues such as stigma, visibility, discomfort, and social negotiation.

Following the interviews, participants completed cultural probes [60] designed to elicit situated, emotional, and symbolic reflections on living with a CGM device. The probes consisted of eight prompts addressing moments of difficulty or ease, trust and information-seeking practices, personalisation desires, enabled and constrained activities, care routines, and device breakdowns. Participants could choose between a digital photo diary or a set of creative postcards as expressive formats. A follow-up meeting supported collective interpretation of the materials, allowing participants to contextualise their responses and articulate affective dynamics that might not emerge through interviews alone.

4 FINDINGS

Following the end of each research activities a thematic analysis of the transcriptions of the sessions has been performed and in what follows we report the main four critical issues that have been identified as recurring themes which can reveal interesting insights to explore how interaction design of the CGM system may perpetuate the gender-blind digital inheritance the design field heritage from medicine field. Each one is introduced by illustrative interview statements.

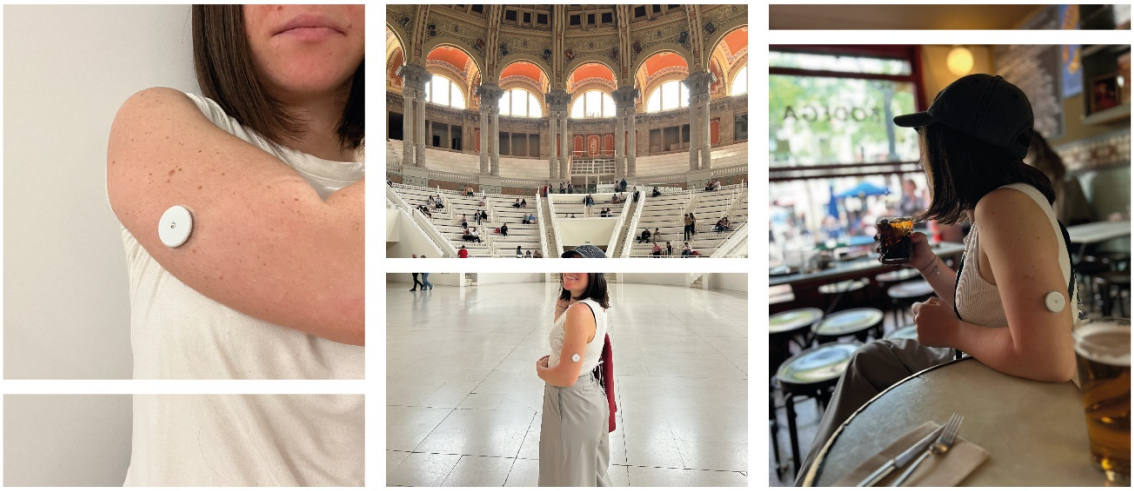

Figure 2: Visual extracts from the embodied autoethnography research activity

4.1 A non-comunicative and non-responsive companion

Across the embodied autoethnography and qualitative engagements, the CGM system emerged as a constant yet largely non-communicative presence in everyday care. As noted in the autoethnographic diary, "*It's always there on my body, but it never really tells me anything—it just shows numbers and alarms, and then I'm left alone trying to understand what they mean*" (Research team member, autoethnographic diary). Despite its continuous bodily proximity and centrality in daily routines, the device provided only minimal forms of feedback, limited to data recording and sparse alerts (e.g., "high glucose," "low glucose," "sensor ending soon"). It did not offer explanations, contextual cues, or anticipatory guidance that could support interpretation or decision-making.

This mismatch between constant presence and limited expressiveness was experienced as particularly striking. While the CGM was designed to support self-management, it often functioned more as a silent observer than as an interactive partner in care. Participants expressed a desire for more dialogical or companion-like forms of interaction, suggesting that the system's communicative affordances were insufficient for the complexity of everyday diabetes management.

4.2 Lack of personalisation and misrecognition of embodied variability

CGM users experienced data as aseptic and weakly coupled to their lived experience, despite the system's capacity for long-term data accumulation. As noted in the autoethnographic diary, "*'OUT OF RANGE - OUT OF RANGE - OUT OF RANGE', but it doesn't know if I'm stressed, tired, or having a difficult day, so I guess it ends up thinking it's my fault when the data doesn't make sense*" (Research team member, autoethnographic diary). Rather than adapting through use, the CGM was perceived as continuously capturing measurements without developing a meaningful model of the person wearing it.

This lack of adaptive personalisation was closely tied to bodily and contextual variability, including stress, sleep, daily rhythms, and hormonal fluctuations. Fixed thresholds and standardised visualisations often failed to support sensemaking, generating interpretive breakdowns, friction, and self-blame.

This experience was echoed by CGM users, who described a gradual need to compensate for the system's limitations through personal interpretation. As one participant noted, "*At the beginning it was the same for me, but thanks to the time and experience I have been accumulating, now I can ignore it, as I can evaluate by myself the complexity of the signals*" (Participant B, interview). Importantly, participants did not frame this as a mere usability failure, but as an

interactional misrecognition of embodied and gendered variability, pointing to a design that privileges stability and universality over situated, cyclical, and contextual use.

4.3 Data surveillance and the desire for relational boundaries

Another salient finding concerned data sharing and surveillance, which emerged in close relation to differing levels of diabetes literacy and understanding of glucose variability. Participants articulated a clear distinction between sharing glucose data with clinicians—who were perceived as able to interpret fluctuations within a broader physiological and therapeutic context—and sharing data with family members or non-experts, which was often experienced as intrusive.

This has been confirmed by all the five CGM users, and it could be condensed in a quote coming from a young participant when describing her relationship with her parents mediated by the CGM system: "*I can't stand my parents controlling me; they don't understand what I'm going through*" (Participant C, interview). Indeed, 3 out 5 CGM users mentioned the practice of disabling data sharing with relatives to avoid unsolicited pressure, monitoring, or judgement.

They emphasised that glucose fluctuations are not always the result of conscious behaviour or adherence, but are frequently influenced by factors beyond immediate control, such as stress, illness, or hormonal changes—for example during menstrual cycles. When data were observed without adequate contextual knowledge, fluctuations were often misread as personal failure or mismanagement. In these situations, continuous data visibility transformed care relations into sources of stress, guilt, and misunderstanding. As a result, participants expressed a strong desire to retain control over when, how, and with whom data were shared, highlighting that well-intended care practices can undermine autonomy and dignity when relational boundaries and interpretive competencies are not respected.

4.4 Hormonal variability and gendered care labour

The absence of interactional support for hormone-related glucose fluctuations represents a clear manifestation of gender blindness in CGM design. As one participant noted when reflecting on how the system accounts for fluctuations not directly attributable to diabetes, "*I had never really thought about it, but actually the app doesn't consider that this fluctuation might be due to my menstrual cycle—there isn't even an icon that allows you to indicate that possibility*" (Participant D, follow-up meeting of cultural probes). Although hormonal variability is clinically recognised [61, 62], it remains largely invisible within the interaction logic of CGM systems. The lack of representational and interactional affordances prevents users from contextualising glucose data in relation to bodily cycles, shifting the work of interpretation from the system to the user.

This invisibility has concrete consequences for everyday care practices, particularly for adolescent girls managing menstruation and diabetes simultaneously. Hormonal fluctuations introduce unpredictable glucose variations that are difficult to anticipate, and when the system neither explains nor signals this possibility, responsibility for sense-making is entirely displaced onto the user. At the same time, data-sharing features expose these fluctuations to others—most notably parents—who may lack the interpretive resources to understand them. In such contexts, glucose variability is easily misread as carelessness or non-adherence, intensifying pressure, surveillance, and emotional strain.

5 DISCUSSION

These findings demonstrate that gender blindness is not confined to clinical protocols or datasets but is materially reproduced through interaction design.

The recurring experience of the CGM as a "silent companion" exposes a fundamental tension between continuous monitoring and relational responsiveness. Although the device maintains constant bodily proximity, it does not meaningfully engage with users' embodied expertise, emotional states, or contextual knowledge. This communicative silence constrains the system's agential role and intensifies the user's burden of sense-making.

This confirms that the CGM can be understood as an active participant in care practices, shaping agential capacities through its affordances and limitations, in line with the feminist new materialism theoretical framework. However, agency is unevenly distributed: while the system records, visualises, and alerts, the work of interpretation, anticipation, and emotional regulation is displaced onto users. This redistribution is particularly consequential for individuals whose glucose variability deviates from male-pattern assumptions, such as those experiencing hormonal fluctuations.

In this context, gender does not function as a predefined user attribute but emerges as an effect of sociotechnical assemblages in which bodies, data, interfaces, and relationships are entangled. Androcentric baselines embedded in CGM interaction design—grounded in assumptions of metabolic stability and linear causality—unevenly redistribute care labour, positioning women and girls as compensators for system limitations. They are required not only to interpret glucose fluctuations on more occasions, but also potentially to justify their bodies to others and absorb the emotional consequences of misrecognition. This reframes gender bias in digital health as a fundamentally interactional problem, where design choices shape who must explain, defend, and carry uncertainty in everyday care practices.

6 Limitations of the study, future work and conclusion

This study illustrates how gender-indifferent interaction design can shape care practices through specific mechanisms observed in this case and it partly demonstrates that gender blindness in healthcare is not confined to medical data or clinical protocols but is materially enacted through interaction design. Through an in-depth qualitative investigation of Continuous Glucose Monitoring systems, we show how interface logics, feedback mechanisms, and representational choices shape everyday care practices by determining which forms of bodily variability are recognised and which are rendered invisible, thereby displacing the burden of sense-making onto users. While the study is based on a small qualitative sample and includes only women participants, this focus enabled a situated and analytically rich exploration of gender-blind interaction

patterns that are often obscured in large-scale studies; the wide age range of participants further supported an initial examination of life-stage–specific interactions. At the same time, the absence of intersex and gender-diverse participants highlights an important direction for future work, calling for research that explicitly examines how gender-indifferent interaction design marginalises non-binary and intersex bodies. By reframing gender bias in digital health as an interaction design problem rather than solely an issue of representation or access, this paper contributes to HCI and Interactive Health research by foregrounding the need for interactional approaches that recognise bodily variability, relational contexts, and the uneven distribution of care labour in everyday chronic care.

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