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GLOBAL HEALTH HUB GERMANY

COMMUNITY PAPER

FEMINIST PERSPECTIVES ON AI DEPLOYMENT IN WOMEN'S HEALTH

A Community Paper of the Global Health Hub Germany Community on Women's Health

Background of this Paper

The Women's Health Community has launched a scoping review of feminist scholarship on the deployment of artificial intelligence (AI) in women's health. This paper presents the theoretical framework developed to guide that review. We argue that feminist scholarship offers a starting point for identifying and understanding opportunities and challenges of deploying AI in women's health. However, current literature is dispersed across disciplines, such as science and technology studies, feminist theory, public health, bioethics, and clinical informatics, and uses different conceptual vocabularies to address similar concerns. Consequently, no shared analytical framework exists to synthesize these contributions. We therefore contend that making this framework explicit is an original contribution in itself, providing the conceptual infrastructure needed for meaningful synthesis across a heterogeneous field.

About the authors
The policy paper reflects the results of the discussions in the Hub Community.
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Problem Statement and Rationale

Artificial intelligence (AI) is increasingly embedded in women's health, including maternal care, gynecological oncology, reproductive medicine, and primary care decision support systems [1-3]. Proponents argue that AI tools and systems enhance diagnostic accuracy, improve clinical efficiency, and expand access to care [4, 5]. However, scholarship reveals that they often perpetuate inequalities: training datasets frequently underrepresent women of colour, older women, and women from low- and middle-income countries [6, 7]; design choices are shaped more by developers' priorities or technical specificities than by the needs of clinicians or patients [8, 9]; and those most affected by system failures are seldom central in assessing risk or benefit [10, 11].

Feminist scholarship offers a critical lens for analyzing these developments because it rejects the separation of technology, knowledge, and power. Rather than asking only whether AI systems work, it asks for whom they work, whose knowledge they encode, and which power relations they reproduce or challenge [12]. Yet, this scholarship is dispersed across science and technology studies, feminist theory, public health, bioethics, and clinical informatics. It lacks a shared analytical framework for synthesis, limiting its use in research and policy [13, 14].

This paper develops a theoretical framework to address this gap, drawing on an ongoing critical scoping review and guided by the question:

> How does feminist scholarship characterize the challenges and opportunities of AI deployment in women's health?

The framework is a contribution: it provides a conceptual set-up for synthesizing a fragmented field, makes evaluative criteria explicit, and enables comparative analysis across heterogeneous scholarship.

Definition of 'AI deployment in women's health'

The implementation of AI tools, including but not limited to machine learning systems, predictive algorithms, diagnostic or triage systems, and clinical decision support tools, in contexts related to reproductive health, maternal care, gynecology, gender-specific disease presentation, and related domains. Feminist analysis examines not only technical performance but also the social conditions of deployment: who benefits, who is harmed, who is excluded, and what assumptions are encoded. Deployment is understood as a process that is not only technical but also deeply socio-technical, embedded within institutional and power relations that shape AI adoption and use.

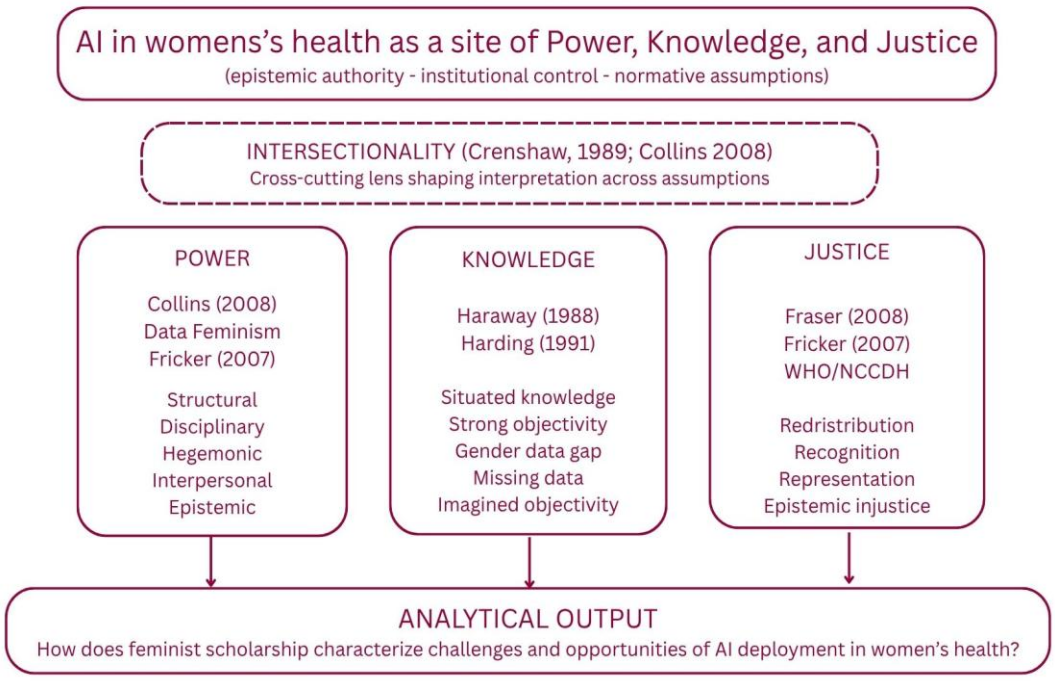
Theoretical Framework

The framework conceptualizes AI in women's health not as neutral but as a site where epistemic authority, institutional control, and normative assumptions are produced.

It draws on data feminism principles [12] and the matrix of domination paradigm [15] as well as on Haraway's theory of situated knowledge [16] and Harding's strong objectivity concept [17]. It is further informed by Fraser's theory of justice [18], Fricker's epistemic injustice [19] and health equity frameworks that foreground the social and structural determinants of health [20, 21].

These concepts are organized into three core dimensions: *Power*, *Knowledge*, and *Justice*. *Intersectionality* serves as a cross-cutting analytical lens applied throughout the framework to shape the interpretation of each dimension [22, 15]

Figure 1. Theoretical framework: A feminist perspective on AI when deployed in women's health



Source: Authors' elaboration based on Collins (2008), Haraway (1988), Harding (1991), Fraser (2008), Fricker (2007), Crenshaw (1989), and D'Ignazio and Klein (2020).

POWER

Who controls AI when deployed in women's health?

This dimension is grounded in intersectional theories of domination, particularly Collins' matrix of domination [15], which conceptualizes power as operating across structural, disciplinary, hegemonic, and interpersonal domains, and in data feminism [12], complemented by Fricker's epistemic power [19]. As such, it is understood as relational and embedded within broader social, political, and institutional arrangements.

For instance, within healthcare systems, structural power shapes priorities in research, funding, regulation, and service provision, influencing which health issues receive attention and resources [see 23]; disciplinary power operates through professional norms, standards, and institutional practices governing clinical decision-making and access to care [see 24]; hegemonic power shapes dominant understandings of health, illness, risk, and normality, making some experiences and forms of knowledge more visible and legitimate than others [see 25].

Interpersonal power emerges within healthcare encounters, where authority, credibility, and decision-making are unevenly distributed among patients, professionals, and institutions [see 26,27]. Epistemic power is also central to this dimension: the capacity to define what counts as legitimate knowledge, evidence, and expertise [19].

These five domains of power are not external to AI systems. They shape what data is collected and by whom (structural), how AI outputs are integrated into clinical protocols (disciplinary), which health conditions AI addresses (hegemonic), how AI-mediated recommendations are communicated to patients (interpersonal), and whose knowledge is included, excluded, and validated in AI systems (epistemic).

KNOWLEDGE

What counts as evidence when AI is deployed in women's health?

This dimension draws on Haraway's concept of situated knowledge [16] and on Harding's concept of strong objectivity [17].

The former rejects the idea of disembodied objectivity and argues that all knowledge is produced from partial, socially situated perspectives. Knowledge is therefore not neutral but shaped by historical, institutional, and social contexts, which determine what is visible, measurable, or knowable. It involves selection, classification, and validation practices that define legitimate evidence. The latter demands that researchers critically examine their own social locations and cultural assumptions, utilizing the perspectives of marginalized groups (such as women of color, and from lower socioeconomic backgrounds) to expose biases, in particular androcentric biases, and produce more accurate knowledge.

Several concepts operationalize this dimension. The gender data gap refers to the systematic underrepresentation of women and gender-diverse people in knowledge production, which

shapes what is known and recognized [14]. Missing data, rather than technical gaps, reflect historical and institutional priorities that render some populations less visible. Feminist scholarship identifies subjugated knowledge, including experiential, embodied, and community-based understandings, that are typically excluded from biomedical frameworks.

Classification systems define categories and differences, determining what is intelligible and what remains invisible. These concerns arise in critiques of imagined objectivity, which challenge the assumption that knowledge systems are neutral and unbiased, while in fact obscuring the social roots of knowledge production. Finally, exposure is paradoxical: greater visibility can enable inclusion but may also increase surveillance, control, and vulnerability [12].

JUSTICE

What would just AI deployed for women's health require?

This dimension draws on Fraser's theory of justice as redistribution, recognition, and representation [18], which shifts the focus from individual outcomes to the social, political, and institutional arrangements that sustain inequality.

Redistribution covers how resources, opportunities, benefits, and burdens are allocated. Recognition concerns which identities, experiences, and knowledge are valued and treated as legitimate. Representation focuses on who participates in decisions, whose interests are included, and who is left out. These concepts help analyze the material and symbolic conditions that reproduce or challenge inequalities.

Feminist scholarship extends this framework by emphasizing that inequalities cannot be addressed through procedural fairness or formal equality alone but require attention to structural conditions shaping participation, recognition, and access to resources [12].

Fricker's [19] concept of epistemic injustice highlights how individuals and groups can be wronged as knowers when their experiences or testimony are dismissed, discredited, or rendered unintelligible within dominant knowledge systems. Health equity frameworks situate these concerns within population health, emphasizing that differences in health outcomes must be understood in relation to social determinants of health, historical disadvantage, and broader power structures [20,21].

Justice is not a corrective mechanism applied after inequality emerges but a normative framework for evaluating the social arrangements through which resources, recognition, participation, and opportunities are organized.

INTERSECTIONALITY

Which women, under what conditions?

Intersectionality, grounded in the work of Crenshaw [22] and Collins [15], functions not as a separate analytical dimension but as a transversal lens that structures the interpretation of power, knowledge, and justice across the framework. It foregrounds the insight that systems of inequality are mutually constitutive and cannot be adequately understood through single-category explanations.

Rather than treating gender as an isolated axis of difference, intersectionality examines how gender interacts with race, class, disability, sexuality, migration status, and other social locations to shape lived experiences and social outcomes.

As both an epistemological and analytical principle, intersectionality directs attention to heterogeneity within social groups and to the uneven ways in which structural power, knowledge production, and distributive arrangements are experienced. It ensures that analyses of power do not assume uniform exposure to domination, that analyses of knowledge do not obscure differential visibility or epistemic authority, and that analyses of justice remain sensitive to uneven claims to recognition, redistribution, and representation.

Conclusion

Taken together, this framework conceptualizes AI in women's health as a site where power structures, understood through Collins' [15] matrix of domination and D'Ignazio and Klein' data feminism [12] organize governance and control; where knowledge systems, in line with Haraway's [16] situated knowledge and Harding's [17] strong objectivity, shape what is rendered visible, knowable, and legitimate; and where justice, grounded in Fraser's [18] conception of redistribution, recognition, and representation, and Fricker's [19] epistemic injustice provides the normative basis for evaluating and contesting these socio-technical arrangements.

Purpose of this Paper
The work of the Global Health Hub Germany (GHHG) covers various various global health issues such as antimicrobic resistance, climate change, migration and global mental health. Actors from civil society to youth, politics and economy work together to synergize and streamline global health activities in a mutlidisciplinary, multisectoral hub.

This community paper was developed by the GHHG Community on Global Women's Health. It presents the theoretical framework for an ongoing scoping review on feminist perspectives on the deployment of artificial intelligence in women's health. By bringing together scholarship from feminist theory, public health, bioethics, science and technology studies, and clinical informatics, the paper offers a structured lens to examine how power, knowledge, justice, and intersectionality shape the development and use of AI in women's health.

About the Global Health Hub Germany
The Global Health Hub Germany offers all individuals and institutions active in the field of global health the opportunity to connect in an independent network across eight different stakeholder groups: International organisations, youth, politics, foundations, think tanks, business, science, and civil society. The members of the Hub work together on current issues of global health. The interdisciplinary ex- ers to support informed policy-making and advance in global health. Founded in 2019, the Hub now has around 2.500 members. For more information visit www.globalhealthhub.de.

About the Hub Communities
The Hub Communities are working groups led by the members of the Global Health Hub Germany themselves. They meet regularly to exchange ideas, share expertise and work together on global health issues. If you would like to join a Hub Community or learn more about their work, contact Katrin Lea Würfel, Head of Community Management: katrin.wuerfel@globalhealthhub.de.

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Annex 1

Table 1: Summary of the theoretical framework

Dimension	Core question	Theoretical grounding	Analytical components	Analytical focus in women's health AI
Power	Who controls AI in women's health?	Matrix of domination (Collins, 2008); Data feminism (D'Ignazio & Klein, 2020) Epistemic justice (Fricker, 2007)	Structural, disciplinary, hegemonic, interpersonal, and epistemic power	Governance arrangements, funding priorities, decision-making authority, professional control, legitimacy of knowledge
Knowledge	What counts as evidence when AI is deployed in women's health?	Situated knowledge (Haraway, 1988); Strong objectivity (Harding, 1991)	Data gaps, missing data, classification systems, subjugated knowledge, embodied knowledge, imagined objectivity	Knowledge production, visibility and invisibility, evidence generation, data practices, clinical categorization
Justice	What would just AI for women's health require?	Redistribution, recognition, and representation (Fraser, 2008); Epistemic injustice (Fricker, 2007); Health equity frameworks (WHO, 2024; NCCDH, 2024)	Equity versus equality, epistemic injustice, co-liberation, community participation, counter-data activism, labour visibility, anti-deficit framing, transformative potential	Health equity, participation, accountability, redistribution of benefits and harms, recognition of diverse experiences
Intersectionality	Which women, under what conditions?	Intersectionality (Crenshaw, 1989; Collins, 2008)	Cross-cutting analytical lens applied across all dimensions	Differential experiences and outcomes across race, class, disability, sexuality, geography, migration status, age, and other social positions

Source: Authors' compilation

Note: Intersectionality functions as a transversal analytical lens rather than an independent dimension, informing the interpretation of *Power, Knowledge,* and *Justice* across all stages of analysis.