Designing Chatbots for Person-Centered Care: Insights from Contraceptive Care in Kenyan Pharmacies

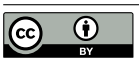
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Adolescent girls and young women (AGYW) in sub-Saharan Africa face barriers to contraceptive access and lack decision-support resources tailored to their needs. Many Kenyan AGYW seek contraceptive services in the pharmacy setting, but experience stigma, judgment, and privacy concerns that make it difficult to seek guidance from pharmacists. This work examines how chatbots could integrate into Kenya's pharmacy setting to support AGYW's contraceptive decision-making. We presented chatbot prototypes in co-design workshops with AGYW and pharmacy workers to evoke reflections on perceived opportunities, concerns, and preferable futures of chatbot-supported care. Our findings highlight expectations that a chatbot could offer private, non-judgmental spaces for information seeking while shifting trust and authority away from pharmacists, revealing tensions surrounding the distribution of authority, reliance, and control among AGYW, pharmacists, and the chatbot. In response to these tensions, we contribute design guidelines for chatbots to navigate community beliefs and promote shared decision-making by AGYW and pharmacists. More broadly, this work extends research on sensitive health chatbots for youth by showing how such tools embedded within a service delivery setting surface distinct considerations for stakeholder roles and person-centered care.

CCS Concepts: • **Human-centered computing → Empirical studies in HCI**; • **Social and professional topics → Adolescents**.

Additional Key Words and Phrases: chatbot, health, decision making, AI, HCI4D

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1 Introduction

With the advancements of large language models (LLMs), chatbots have emerged as a promising tool for supporting health literacy, including in low- and middle-income countries (LMICs) where access to healthcare and health information is often limited [23]. Chatbots have been offered as a channel to discuss sensitive health topics, such as sexual and reproductive health (SRH), that would otherwise be difficult to discuss openly [12, 53, 66, 68, 69, 90]. However, most chatbots for SRH education and decision-making in LMICs are stand-alone tools that are disconnected from service delivery, limiting their ability to support follow-through with care.

To explore how chatbots might bridge information seeking and service delivery, this work examines the potential of chatbots to support contraceptive decision-making for adolescent girls and young women (AGYW; age 15–24 years) in Kenya's pharmacy setting. As of 2019, nearly 50% of pregnancies among AGYW aged 15–19 years in LMICs were unintended and 55% of these ended in abortions, often unsafe in LMICs [82]. In sub-Saharan Africa, adolescents face multiple barriers to contraceptive care, including stigma around female sexual activity and pregnancy, negative attitudes of health workers, and social pressure to have a child [52, 82]. Despite recognition of AGYW needs for contraceptive services, conventional health facilities struggle to reach AGYW because their services are costly, time-consuming, or providers resist serving adolescents [14, 77].

As a result, pharmacies are used as key access points for contraception for AGYW in sub-Saharan Africa [19, 20, 67]. In fact, half of AGYW aged 15–19 years using modern contraceptive methods obtain their method from commercial drug sellers or informal providers [67]. In Kenya, many AGYW prefer pharmacies for receiving contraceptive services because of their convenience, privacy, speed of service, and perception of less judgmental providers [19, 20, 26]. However, pharmacies have limited availability of contraceptive methods [19], pharmacists lack medical training [22], and counseling can be sporadic and inaccurate [21]. As such, contraceptive counseling in the pharmacy setting struggles to align with AGYW's values and preferences, highlighting the need for innovative, accessible approaches to strengthen AGYW engagement with contraceptive care.

To address this challenge in Kenya's pharmacy setting, researchers have developed a contraceptive decision-making mobile app for AGYW [61]. However, this work also identified the limitations of static content in addressing the broad range of new and evolving questions that arise after app use [61]. Seeking answers from pharmacy workers may not adequately address this gap, as many AGYW are uncomfortable raising contraceptive questions because they fear judgment or biased guidance and encounter limited privacy or time for counseling [17, 22, 61]. Moreover, pharmacy workers' limited medical training may constrain their ability to answer some questions accurately and comprehensively [22].

This work aims to explore how a chatbot in the pharmacy setting can bridge this service gap. We focus on chatbots because of their ability to enable open-ended dialogue, offering a safe channel to ask questions that may otherwise be difficult to raise with community members [68, 69, 97]. Our envisioned chatbot would be embedded within the pharmacy setting where contraceptive services are provided and work alongside pharmacists to address the needs of AGYW. We pose the following research question: **How can chatbots be designed to support AGYW's contraceptive decision-making in ways that are responsive to the realities of the pharmacy setting in Kenya?**

To address our research question, we created chatbot prototypes to evoke reflections in co-design workshops in Kisumu County, Kenya with AGYW and pharmacy workers. We conducted workshops separately with AGYW and with pharmacy workers to capture the distinct perspectives of these two key stakeholder groups: AGYW, as the intended end users of the chatbot, and pharmacy workers, whose acceptance critically shapes the integration of chatbots in the pharmacy setting. The goal of these workshops was to explore perceived opportunities, concerns, and preferable futures of chatbot-supported contraceptive care in the pharmacy setting. More broadly, this work aims to contribute towards the improvement of contraceptive education and autonomy for a population that faces persistent barriers to informed decision-making.

Our findings show that the chatbot was anticipated to create a safe, non-judgmental space where AGYW could ask sensitive questions they might otherwise withhold from asking the pharmacist. Participants expected that the chatbot would shape how AGYW engage with pharmacists, with some pharmacists expressing concern about their roles being minimized in AGYW's decision-making. These perspectives highlight tensions around trust, privacy, and information sharing that are introduced or amplified by client-facing chatbots. Participants also articulated desired chatbot interactional qualities that reflected their expectations for counseling.

Building on prior research on SRH chatbots for youth, our work contributes design guidelines for chatbots embedded in settings where SRH services are provided. Rather than treating the chatbot as a standalone source of information, we examine how it could operate within pharmacy-based contraceptive care, where AGYW's needs for privacy, autonomy, and non-judgmental information intersect with pharmacists' responsibilities for counseling, safety, and service provision. Specifically, we reflect on how chatbots can navigate community beliefs when these are perpetuated by pharmacists, how they can be designed to support shared decision-making, and how design choices around modality, access, and care integration can extend support to a diverse range of AGYW. Our insights offer guidance to chatbot designers and CSCW and HCI researchers for designing sensitive health chatbots that not only deliver information, but also coordinate relationships, responsibilities, and handoffs across clients, providers, and a chatbot.

2 Related Work

2.1 Person-Centered Care for Contraception

Person-centered care is "*care that's guided and informed by patients' goals, preferences, and values*" [16]. A central mechanism for person-centered care is shared decision-making, in which clinicians and clients make decisions together using the best available evidence while considering clients' preferences, circumstances, and priorities [81]. In contraceptive care, person-centeredness often takes the form of preference-sensitive decision-making, where method choice depends on factors such as perceived safety, effectiveness, and side effects [44, 46]. This approach responds to documented misalignments between clients' and providers' priorities [92]. These insights have informed digital decision-support tools such as My Birth Control, a U.S.-based web tool used before counseling to improve contraceptive counseling experiences and support method choices aligned with users' needs and preferences [11].

However, person-centered contraceptive decision-support tools remain understudied in LMICs. Existing digital interventions support contraceptive education or behavior change [25, 48, 65], but are not necessarily tailored to specific populations' constraints, needs, and preferences. This gap may partly reflect limited data on women's contraceptive preferences and priorities in LMICs, and even less on adolescents' priorities for decision-making. Although some digital interventions provide SRH guidance for adolescents in LMICs [49, 53, 54, 68, 90], they often insufficiently address adolescents' limited access to and familiarity with mobile devices [45, 61].

Our work aligns with CSCW and HCI research which values person-centered care by designing technologies tailored to the practices, needs, and challenges faced by specific populations. Prior work has examined SRH technologies that account for teenagers' information-seeking practices [13], experiences with in-person care for LGBTQ+ people with uteruses [64], and users' diverse digital, health and language literacy levels [6, 61]. Most relevant is the work by Orii et al. [61], which developed the Mara Divas app, a contraceptive decision-support app for AGYW seeking services in Kenyan pharmacies. The app, whose primary users are AGYW, provides information on contraceptive methods and topics that are important to AGYW, such as bleeding patterns, privacy of contraceptive use, and influence on future fertility, addressing the low levels of knowledge about side effects of contraception and strong beliefs about contraceptive harms. The app was installed on a tablet within pharmacies to address limited access to personal mobile devices and allow pharmacist support when needed, and its use was followed by face-to-face counseling with the pharmacist for AGYW to be provided either their desired contraceptive method or a referral. While the app helped AGYW learn about contraception and structure new questions that built on their newfound knowledge, many AGYW were uncomfortable approaching the pharmacist with these questions. Their discomfort was due to prior negative interactions with the pharmacist, where they were judged for being sexually active and for seeking contraception, and being asked invasive questions.

2.2 AI for Person-Centered Care and Shared Decision-Making

Artificial intelligence (AI) is increasingly used in healthcare to augment clinical decision-making, expand access to care, and address gaps in health systems. Many AI applications in health, such as clinical decision-support systems, are provider-facing and their perspectives have been driven by those in the Global North [58, 78]. In LMICs, AI is often motivated by shortages in quality healthcare services [58] and has focused on supporting community health workers [59, 78]. AI applications in LMICs carry unique considerations and implications due to lower digital literacy levels than in high-income countries. For instance, AI literacy may be lower than in western settings [78] and overtrust and overreliance on AI-enabled decisions more pronounced [1].

Many AI applications undermine person-centered care and shared decision-making by sidelining clients' values and preferences [34], feeding data into an algorithm that generates recommendations for providers [3, 28]. CSCW and HCI researchers have therefore examined how AI can better support person-centered care by treating clients as active decision-makers rather than passive sources of data [28, 34, 68, 69]. For example, Kim et al. [34] recognize clients as active decision-makers and introduce the term "*shared technology*" to frame decision-support AI as playing a role between clients and providers. Moore et al. [50] also show how AI can support alignment among staff and caregivers in care decisions. Pre-consultation chatbots are one form of client-facing AI designed to support shared decision-making and client-provider communication. Compared to traditional questionnaires, LLM-enabled chatbots can provide more engaging, open-ended interactions [35, 36, 40, 41, 83, 96] and help clients reflect on their concerns and prepare for consultations [5, 40]. Providers also view these chatbots as a partner in the care team that facilitates client-provider communication [70, 74]. A previous study also found that when clients perceive chatbots as extensions of a healthcare provider's persona, they share the same level of self-disclosure with the provider as they do with the chatbot, indicating that chatbots can positively shape future client-provider communications [39].

Across contexts, researchers have emphasized the need to ensure that AI systems do not undermine providers' judgment in decision-making, by positioning these technologies as complements to, not replacements of, medical professionals [69]. Our work builds on this dialogue by examining pharmacists as key stakeholders in pharmacy-based contraceptive care. We consider how

chatbot-supported decision-making can meet AGYW's needs while also accounting for pharmacists' expectations and roles.

2.3 Chatbots for Health Information Seeking

CSCW research has examined chatbots for health education and information seeking across topics such as mental health [31, 39, 79, 93], weight management [7], vaccinations [32], and breastfeeding [97]. Chatbots can encourage self-disclosure [39] and reduce stigma around certain health conditions [38]. However, concerns about accuracy, privacy, and bias remain especially consequential in health contexts [42, 53, 55, 69, 91]. Researchers therefore argue that chatbots should serve as complementary sources of support that do not replace human professionals [68, 69].

In LMICs, where access to healthcare and health information is often limited, chatbots can serve as a first point of contact for health-related inquiries and extend support beyond conventional health facilities [23, 32, 68, 91, 97]. They have been used for information seeking on sensitive topics that may be difficult to discuss openly, including SRH [12, 33, 53, 66, 68, 69, 75, 90], breastfeeding [97], and mental health [73]. In these contexts, researchers emphasize the need for context-aware and culturally appropriate chatbots [12, 33, 53], while recognizing challenges in balancing medical accuracy with respect for cultural beliefs [12]. Access and privacy are also important, as shared mobile device use may shape when, where, and how people can privately engage with chatbots [32].

There has been a growing body of work on chatbots for SRH information seeking in LMICs. For example, Kaur and Singh [33] examined how postpartum women in India use ChatGPT for family planning information within broader support-seeking networks. However, only a few SRH chatbots are tailored to adolescents and young adults in LMICs [49]. A WhatsApp-based chatbot provided menstrual health education for Pakistani college women [75]. AdolescentBot, a text-based chatbot allowed adolescents in Bangladesh to ask questions about SRH [68]. SnehAI in India promoted SRH conversations among adolescents and young adults through multimodality, entertainment features, and a familiar female persona [90]. Nthabi delivers SRH information to young women in Lesotho provides contraceptive information through a local midwife persona and menu-based clinical topics [53, 54]. These SRH chatbots, however, assume access to personal mobile devices that can be privately used, sufficient digital literacy, and prior use of social media, which may not be common for adolescents in LMICs [45]. Moreover, many are stand-alone tools that operate independently of health resources or service provision. Our work contributes a reflection on positioning an SRH chatbot within a broader ecosystem of decision-making resources, focusing on Kenyan pharmacies where many AGYW seek contraceptive services.

3 Methods

The goal of this work was to understand perceived opportunities, concerns, and preferable futures of chatbot-supported contraceptive care in the Kenyan pharmacy setting. To accomplish this, we created and presented chatbot prototypes in co-design workshops with AGYW and pharmacy workers in Kisumu County, Kenya. While the chatbot concept, pharmacy setting, and initial interaction modalities were predetermined by the research team, the workshops invited participants to examine and shape potential chatbot interactions, roles, and boundaries, as well as their integration into pharmacy-based contraceptive care. Thus, co-design focused on exploring and refining possibilities within a researcher-defined solution space rather than collaboratively determining the intervention itself.

This work is motivated by a service gap suggested by prior literature on Kenyan AGYW seeking contraceptive services in the pharmacy setting [17, 22, 61]: AGYW have questions about contraception, but many are not comfortable approaching the pharmacist with these questions due to fears of judgment. Our work considers whether and how chatbots can address this service gap by

building on prior work that identifies how chatbots support open-ended dialogue and provide a safe channel to ask questions [68, 69, 97]. The envisioned chatbot is intended to be used after the contraceptive decision-support app built by Orii et al. [61] to provide AGYW with a private space to have sensitive questions addressed before engaging in face-to-face counseling with a pharmacist.

This research was approved by the Kenya Medical Research Institute Scientific Ethics Review Unit and the University of Washington Human Subjects Division. We obtained a research permit from the Kenya National Commission for Science, Technology, and Innovation.

3.1 Chatbot Prototypes

Given the sensitivity of contraception and the risks of deploying a functional chatbot, we created and presented non-functional chatbot prototypes in co-design workshops. We prepared the prototypes before the workshops to provide participants with specific examples of chatbot interactions rather than asking participants to respond to an abstract hypothetical scenario. This was important because we anticipated that many AGYW seeking pharmacy-based contraceptive care would have little or no prior experience interacting with chatbots. The prototypes allowed us to explore design possibilities that would be difficult to do with a single functional system, especially given the technical challenges of supporting local languages and mixed-language interactions. Thus, the prototypes were not used to speculate about whether chatbot technology could exist, but to elicit reactions to how different designs might be experienced, appropriated, and incorporated into care in ways responsive to AGYW's needs and the sociocultural realities of Kenyan pharmacies.

We developed three prototypes: a text chatbot, an options chatbot, and an avatar chatbot. Because our research question asks how chatbots can be designed to support AGYW's contraceptive decision-making and fit into the realities of Kenyan pharmacies, we selected prototypes that varied along design dimensions likely to matter in this setting, such as structure of conversation, privacy of use, accessibility. Although these prototypes did not cover every possible chatbot design, we limited the set to three prototypes to provide participants with a manageable number of designs to compare in depth during the workshop, while still covering a meaningful range of interaction styles. The text chatbot represented open-ended interaction, the options chatbot represented structured navigation, and the avatar chatbot represented a more accessible and socially present interaction. These contrasts were relevant because Kenyan AGYW have varying levels of digital and language literacy that can affect their ability to engage with traditional text-based interfaces [61]. Each prototype was a video presenting a scripted fictional dialogue between an AGYW and a chatbot about a specific contraceptive method and illustrated the AGYW's questions, concerns, and decision-making needs (e.g., "*I am concerned about my fertility with using the injection*"). To ensure clinical accuracy, all dialogues were co-developed with a clinical reproductive health expert.

3.1.1 Text chatbot. The text chatbot presented an interaction in which a user types a question or response into a text box to receive a text-based response. This modality reflected the most common form, one that AGYW who have prior experiences with chatbots may be accustomed to. In this prototype, the chatbot directly addressed AGYW questions and maintained a systematic response pattern by ending each message with the prompt, "*Do you have other questions?*" This prototype reflected a direct tone, emulating the professionalism that AGYW wanted from pharmacists [61], allowing us to explore how AGYW responded to a straightforward, formal conversational style. An excerpt of the prototype conversation is shown in Figure 1.

3.1.2 Options chatbot. The options chatbot prototype showed an AGYW selecting conversations from a set of predefined topics. Given some AGYW's low language literacy levels [61], we designed a prototype that reduced the cognitive and linguistic burden of generating questions independently.

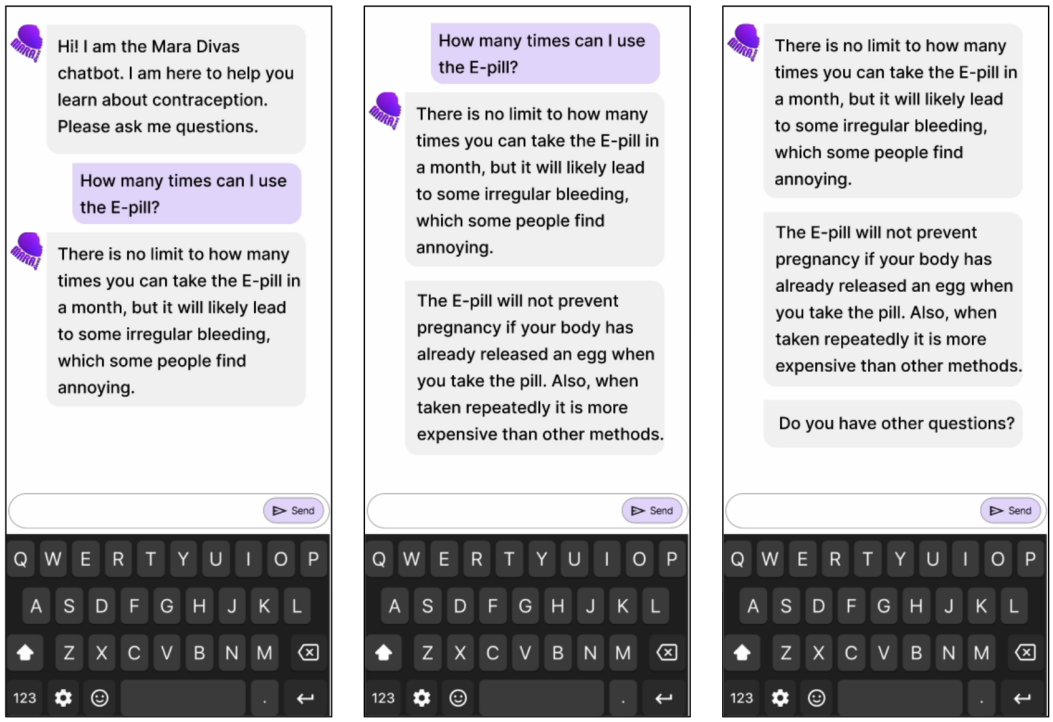


Fig. 1. Text chatbot prototype depicting a conversation in which an AGYW user engages in text-based exchanges with a chatbot.

The options chatbot was designed to examine a more structured and scaffolded interaction modality, an approach shown to support youth in acquiring health knowledge without requiring familiarity with standard medical terminology [68]. While in the other prototypes, AGYW are required to articulate questions, the options chatbot shows an example in which AGYW could engage with a chatbot without directly asking questions.

Figure 2 shows interactions with this prototype. When the chatbot asked "*Do you have any concerns about the injection?*", the AGYW chose from options such as fertility, bleeding, or privacy (Figure 2 left). Once an option was selected, the chatbot provided a text-based response. At the end of the interaction, the chatbot invited the AGYW to type remaining questions (Figure 2 right). Through this design, we aimed to understand whether AGYW, particularly those who may be unsure about what concerns are relevant or how to articulate their questions, would prefer a guided conversational flow over more open-ended formats.

3.1.3 Avatar chatbot. Orii et al. [61] found that Kenyan AGYW responded positively to multimedia app elements, describing them as easier to follow, engaging, and faster to understand than text-heavy content. We also knew that many AGYW in Kenya were familiar with voice-based AI tools such as Google Voice Search, suggesting that speech interaction might feel intuitive. These insights informed our design of an avatar chatbot that supported speech and audio engagement, which we expected to be accessible for AGYW with low reading and writing proficiency.

This prototype showed an interaction through voice commands and audio responses. An illustrated female-presenting character appeared on screen with a female-presenting, British-accented voice, representing the chatbot. This prototype adopted an empathetic, human-like tone, building

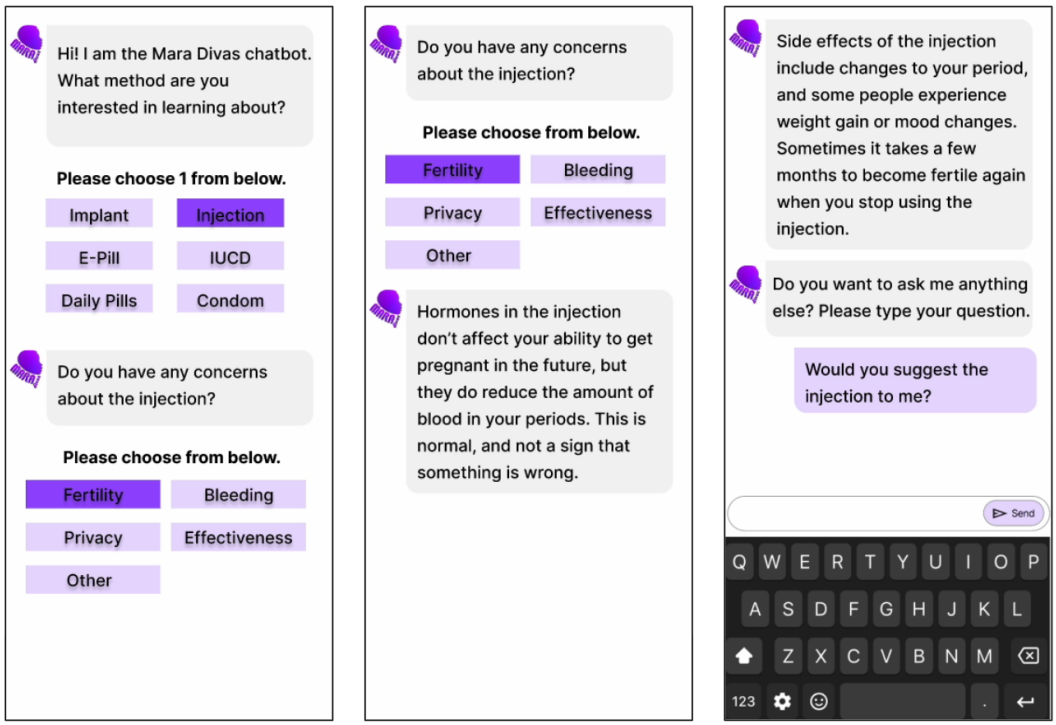


Fig. 2. Options chatbot prototype depicting a conversation in which an AGYW user guides the conversation direction by selecting from a list of pre-defined options. At the end, the AGYW has the option to type any remaining questions.

on insights from CSCW and HCI which emphasize the value of conversational styles that go beyond doctor-like behaviors for health chatbots [93, 98]. The prototype used supportive phrases such as, "*That's a good question!*" and "*I understand that concern*" to distinguish it from the more direct and succinct text-based chatbot. This tone was intended to emulate a supportive conversation AGYW might wish to have with a pharmacist, allowing us to explore preferred interaction styles in both chatbot use and contraceptive counseling. An excerpt of the prototype conversation is shown below.

- **Avatar Chatbot:** Do you have questions about the implant?
- **AGYW:** I am concerned about my fertility with using the implant.
- **Avatar Chatbot:** I understand infertility is a big concern for many AGYW. A few days after having the implant removed, your body will return to your normal level of fertility. Does that ease your concerns about fertility?
- **AGYW:** What are the side effects of the implant?
- **Avatar Chatbot:** That's a good question! Side effects depend on the method and the person. Your periods might be light and irregular or stop when using the implant, but this is not bad and does not lead to fertility problems.

3.2 Co-Design Workshops

3.2.1 Study Setting. This study was conducted in Kisumu County in western Kenya, where the Luo community is the predominant ethnic group. The main languages spoken are Dholuo, Kiswahili

(the national language), and English. In 2022, 9.2% of AGYW aged 15-19 in Kisumu County had ever given birth, and 11.1% had ever been pregnant [57]. Most contraceptive methods are available at public health clinics either free of charge or at a minimal cost. Pharmacies typically offer condoms, emergency contraceptives, depot medroxyprogesterone acetate (injectables, commonly known as "depo"), and combined oral contraceptive pills. While some pharmacies also provide contraceptive implant insertions, the majority refer clients to nearby clinics for implants or intrauterine devices (IUDs/IUCDs).

3.2.2 Study Design. We conducted four co-design workshops in Kisumu County, Kenya in April 2025: three with AGYW aged 15-24 years with pharmacy-based contraceptive care experience and one with pharmacy workers. We included AGYW as the intended users of the envisioned chatbot and pharmacy workers as key stakeholders whose workflow and care practices would be impacted by the chatbot. Involving both groups allowed us to examine how chatbots might facilitate shared decision-making while operating within the constraints and practices of pharmacy-based care.

Co-design involved participants reflecting on the chatbot prototypes to ideate preferred modalities, desired roles of a chatbot and the pharmacist, the boundaries of chatbot conversations, and how the chatbot should fit within AGYW–pharmacist interactions. These insights informed design considerations for contraceptive chatbots that are a ppropriate for a sensitive health context and responsive to the needs, constraints, and relationships in pharmacy-based care. Workshops were conducted in a combination of Dholuo, Kiswahili, and English and ran from 9AM to 3PM, including a 90-minute lunch break and a 15-minute tea break.

3.2.3 Participants. Given that the workshop activities involved discussion of AI-related concepts, recruitment focused on gathering AGYW who were comfortable with technology. AGYW participants were recruited using community-based strategies to optimize the diversity of perspectives and experiences in the three AGYW workshops by age, education, and contraceptive experience. Purposive sampling [85] and snowball sampling [63] were used to recruit AGYW from mobilizers in a community program. After mobilizers identified potential AGYW participants, female Kenyan study staff who spoke Dholuo, Kiswahili, and English met with potential participants to assess their eligibility. Some potential AGYW participants were approached directly by the study staff. Eligible AGYW were (1) cisgender female; (2) age 15-24 years; (3) accessed pharmacy-based contraception at least once in the past year; (4) not currently pregnant; (5) speakers of Kiswahili and/or English; (6) comfortable reading Dholuo, Kiswahili, and/or English; and (7) willing to sign informed consent.

Pharmacy workers were recruited from pharmacies in Kisumu and peri-urban areas, balancing gender and age of participants. Recruitment prioritized pharmacy owners or assistants[1] who were familiar with the broader project motivation, and snowball sampling was used by requesting introductions from pharmacy workers. Kenyan study staff (same as those who recruited AGYW) identified eligible pharmacists who were (1) at least 18 years of age; (2) currently working in a pharmacy providing condoms, emergency contraception, combined oral contraceptive pills, and depot medroxyprogesterone acetate; (3) currently working in a pharmacy that has a counseling room/private space; (4) speaks Kiswahili and/or English; (5) feels comfortable reading English and/or Dholuo, Kiswahili, and English; and (6) willing to sign informed consent.

In total, 36 AGYW and 12 pharmacy workers (6 female) participated in the co-design workshops. AGYW ranged in age from 15–24 and the median age was 19.5 (IQR 17–23). The sample size was determined through the review of relevant literature in the health domain using similar methods [24, 27, 94] and guidelines in qualitative research [71]. Pharmacy workers ranged in age

[1]Pharmacy owners own the businesses and have medical backgrounds while only a subset of pharmacy assistants have medical backgrounds.

from 22–49 and the median age was 30.5 (IQR: 30–34.5). Table 1 and Table 2 show the summary of AGYW participants and pharmacy worker participants, respectively. Notably, while only one AGYW was familiar with the term "chatbot," many other AGYW had heard of or used ChatGPT or Google Voice Search. AGYW participants and pharmacy worker participants were compensated with 1000 KES and 2000 KES (approximately 8 USD and 15 USD), respectively, for their participation. The compensation was determined based on the judgment of the Kenyan ethics review board of what was appropriate and not unduly incentivizing.

Table 1. Characteristics of AGYW participants of chatbot co-design workshops.

	Workshop ID		
Characteristic	**AGYW-1**	**AGYW-2**	**AGYW-3**
Total Participants, n	12	12	12
Median Age (IQR)	23 (20.75–24)	18 (18–22.25)	17 (17–17)
Education Level, n			
Primary school, not complete	0	0	0
Primary school, complete	0	0	0
Secondary school, not complete	2	3	10
Secondary school, complete	5	4	2
Post-secondary school	5	5	0
Mobile Phone Use, n			
Has access to a mobile phone	12	12	11
Has access to a smartphone	12	10	9
Owns a personal mobile phone	12	11	8
Median Score of Comfort with Mobile Phones (IQR)	4 (4-4.25)	4.5 (3.75-5)	4 (3-5)
AI Familiarity (heard of or used), n			
Chatbot	0	1	0
ChatGPT	6	7	8
Google Voice Search	6	4	2

3.2.4 Data Sources and Collection Process. Data were collected through the pre-workshop questionnaires, artifacts (i.e., sticky notes written by participants and facilitators), written observation notes in English, and audio recordings. The primary data sources were artifacts and written observation notes, which were produced for all workshop activities, as the workshops were centered around activities to create visual representations of ideas and concepts. Audio recordings were a secondary data source to retain individual participant quotations and perspectives. Audio recordings were translated and transcribed into English after the workshops by Kenyan workshop facilitators.

Each workshop began with the distribution of consent forms and a group explanation of the study, including confidentiality and consent procedures. Participants then signed the consent forms individually and completed a paper-based pre-workshop questionnaire. For AGYW, the questionnaire collected demographic information and technology familiarity, including mobile app comfort levels using a 5-point Likert scale (1: not at all comfortable, 5: extremely comfortable). For pharmacy workers, it only collected demographic information. The questionnaire is included in Appendix A.

Table 2. Characteristics of pharmacy worker participants of chatbot co-design workshops.

Characteristic	Workshop ID Pharmacy-1
Total Participants, n	12 (6 female)
Median Age (IQR)	30.5 (30–33.5)
Highest Education Level, n	
Bachelor's Degree	8
Diploma	4
Professional Title, n	
Pharmacist	3
Pharmacy owner	5
Pharmacy technician	2
Pharmacy assistant	1
Other (Nurse)	1
Years Working in Pharmacy, n	
5 or more years	4
2–4 years	4
1–2 years	3
Less than 1 year	1
AI Familiarity (heard of or used), n	
Chatbot	0
ChatGPT	12
Google Voice Search	8

Participants re-grouped to collectively establish workshop norms and expectations and then engaged in workshop activities. During activities, participants were encouraged to share their thoughts aloud and/or write them on sticky notes. Activities were sequenced to mirror the flow of a pharmacy visit, guiding participants to reflect on their experiences from start to finish and discuss how the chatbot could fit into and shape pharmacy visits. Below, we describe the activities in the order conducted. All activities were conducted in both AGYW and pharmacy worker workshops, and descriptions are shown in Table 3.

Journey Mapping: Approaching the Pharmacy. Workshops began with a journey mapping activity to situate the subsequent activities within the broader pharmacy visit. In AGYW workshops, participants discussed their experiences preparing for pharmacy visits, questions they wanted to ask the pharmacist, and how they hoped the pharmacist would support decision-making. In the pharmacy worker workshop, participants reflected on their interactions with AGYW, including how AGYW approached them, commonly asked questions, and ways to provide better contraceptive services to AGYW. Journey mapping lasted approximately 30 minutes.

App Engagement. This activity introduced the Mara Divas app, a contraceptive decision-support app developed by Orii et al. [61], to contextualize the chatbot co-design activities that followed. This activity was not intended to elicit app feedback, but to help participants imagine how digital decision-support tools might fit into pharmacy-based care.

Table 3. Description of workshop activities conducted with AGYW and pharmacy workers.

Activity	AGYW Workshop	Pharmacy Worker Workshop
Journey Mapping: Approaching the Pharmacy	Discussion of experiences preparing for pharmacy visits, questions AGYW wanted to ask pharmacists, and how they hoped pharmacists would support contraceptive decision-making.	Discussion of interactions with AGYW, including how AGYW approached them, commonly asked questions, and ways to provide better contraceptive services to AGYW.
App Engagement	Facilitated and independent app engagement.	Independent app engagement.
Chatbot Prototype Feedback	Discussion of each prototype using the "I Like, I Wish, What If" method a comparison of prototypes.	
Chatbot Ideation	Discussion of what questions AGYW wanted the chatbot to ask them, what questions AGYW wanted to ask the chatbot, and how much personal information they were willing to disclose. Reflection on ideal chatbot modalities.	Discussion of which topics and questions were appropriate or inappropriate for the chatbot to address and how it should interact with AGYW to facilitate person-centered counseling. Reflection on ideal chatbot modalities.
Journey Mapping: Counseling	Discussion of how pharmacists should support AGYW after chatbot use during face-to-face counseling. Comparison of advantages and disadvantages of having the chatbot.	Discussion of how pharmacists should support AGYW after chatbot use during face-to-face counseling.

In AGYW workshops, facilitators first guided participants through one section of the app to ensure they were comfortable using the tablet and app, and then participants used the app independently. In the pharmacy worker workshop, participants used the app alone. In both workshops, independent app engagement, as shown in Figure 3(a). lasted approximately 15 minutes, and was followed by a discussion on how learning about contraception with the app compared to learning from a pharmacist, and what questions AGYW might still have after app use. This activity lasted approximately 45–60 minutes.

Chatbot Prototype Feedback. The goal of this activity was to understand participants' reactions to each chatbot prototype, including their preferences around visual design, conversational tone, and interaction patterns. Participants were introduced to chatbots as technologies that can answer many questions but have limitations compared to human providers. We asked participants if they had heard of or used "chatbots" to gauge whether the term itself was familiar to them. We additionally asked if participants had heard of or used specific AI tools, namely ChatGPT and Google Voice Search, which we knew were commonly used in Kenya and among AGYW. Facilitators then asked participants to imagine that AGYW could use a chatbot after the app and before face-to-face counseling. Participants were shown videos of each of the three chatbot prototypes - text chatbot, options chatbot, and avatar chatbot - in that order. Although the prototypes depicted English dialogues, participants were asked to focus on the visual design, tone, and interaction patterns,

and to assume that the prototypes could be replicated in other languages. After each prototype was shown, participants shared their initial reactions and critiqued the chatbot's responses and modality using the "I Like, I Wish, What If" method [9]. After seeing all prototypes, they compared the prototypes and reflected on who they would or would not recommend each prototype to. Each prototype discussion lasted 30 minutes, and the full activity lasted roughly 100 minutes.

Chatbot Ideation. The goal of this activity was to elicit reflections on how a chatbot could be used in future contraceptive care. The activity had two parts. First, participants reflected on the chatbot's role, scope, and information boundaries within the care process. In AGYW workshops, participants discussed what questions AGYW wanted the chatbot to ask them, what questions AGYW wanted to ask the chatbot, and how much personal information they were willing to disclose to the chatbot, as shown in the artifacts created by participants in Figure 3(b). In the pharmacy worker workshop, participants reflected on which topics and questions were appropriate or inappropriate for a chatbot to address, and how the chatbot should interact with AGYW to facilitate person-centered counseling. Second, participants were encouraged to discuss or sketch their ideal chatbot modalities and persona, as shown in the examples in Figure 3(c). Chatbot ideation lasted approximately 30–45 minutes.

Journey Mapping: Counseling. This activity focused on understanding implications of the chatbot on AGYW-pharmacist interactions. Participants in both workshops discussed how the pharmacist should support AGYW after chatbot use during face-to-face counseling. Only in the AGYW workshops, participants were also asked to compare the advantages and disadvantages of having the chatbot in their pharmacy visit experience. The second journey mapping lasted approximately 30 minutes.

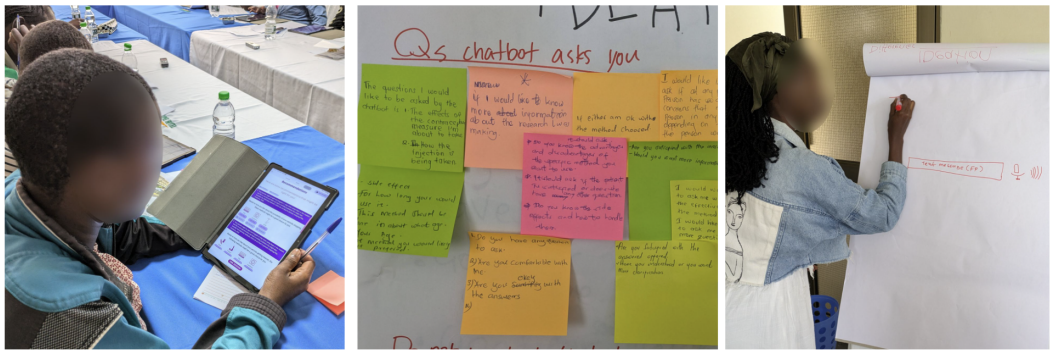


Fig. 3. Workshop activities. (a) AGYW use the contraceptive decision-support app. (b) Artifacts (i.e., sticky notes) made by AGYW participants with comments expressing how they wanted to interact with a chatbot. (c) An AGYW participant sketches their ideal chatbot modality on a poster board during ideation.

3.2.5 Data Analysis. The data was analyzed by a research team from Kenyan and U.S. institutions with expertise in HCI and clinical reproductive health (including adolescent SRH in Kenya), involving all workshop facilitators. Analysis proceeded in two stages: inductive coding of multimedia data (artifacts and observation notes) by the first and fifth authors, followed by collaborative analysis by the larger research team.

The first author created an initial codebook through an inductive approach, by identifying codes that emerged from summary notes for each workshop and grouped them into code categories that were relevant to opportunities and challenges of chatbot-supported contraceptive care. The first author and fifth author independently applied the initial codebook to multimedia data from two separate workshops, noting revisions to make to the codebook, and then finalized the codebook together. All multimedia data was imported into ATLAS.ti 25 and coded by the first author with the final codebook. Once coding was complete, the fifth author reviewed the coding and marked areas of disagreement, which were resolved through discussion with the first author. Through thematic analysis [4], the codes were consolidated into an initial set of themes.

Preliminary themes were discussed with the larger research team through virtual meetings to allow for in-depth analysis to interpret the data holistically. The goal of these meetings was to develop the themes and identify opportunities and challenges in integrating chatbots into pharmacy-based contraceptive care. Kenyan team members contributed essential contextual and linguistic expertise, ensuring culturally nuanced and contextually relevant interpretation of the data. Once themes were finalized, the first author reviewed the English transcripts of audio recordings to select representative participant quotes.

3.2.6 Ethical Considerations. Although minors participated, parental permission was formally waived with approval from the ethics review boards in Kenya and the U.S. This decision reflected recognition that requiring parental involvement in sensitive SRH research could place adolescents at risk of harm. To mitigate potential concerns, minors were encouraged to consult a trusted adult before providing assent. In addition, participants were provided with a contact number that trusted adults could call to obtain further information or to speak directly with the study team. Given that AGYW are a vulnerable population and the sensitivity of the topics discussed in the workshops, we ensured that workshop facilitators included researchers from the same local contexts as the participants and with extensive experience engaging AGYW in conversations about SRH.

The research team's cultural, linguistic, geographic, and disciplinary backgrounds shaped the study design, participant interactions, and interpretation of the data. Workshops were led by three female facilitators. Two facilitators were local to Kisumu County, spoke Dholuo, Kiswahili, and English, recruited AGYW and pharmacy worker participants, and were experienced in leading workshops with AGYW. Their familiarity with the local context and languages supported communication with participants and informed decisions about how workshop activities and questions were presented. The first author attended all workshops. All facilitators contributed to the creation and revision of the study design and data analysis. Data was analyzed collaboratively and interpretations were iteratively refined through input from team members familiar with the local contexts to reduce the risk of interpreting participants' accounts solely through an external perspective.

4 Findings

We first describe the limitations of app-only decision-support, detailing the types of questions that AGYW had after using the app to reiterate the motivation for this research. Then, we describe the findings specific to the chatbot, detailing positive perceptions, how it impacts pharmacist roles, tensions that emerge, and design feedback. Participant quotes are attributed by workshop ID, as shown in Table 1 and Table 2. We use the term "the chatbot" to refer to the chatbot in general as a tool used for contraceptive decision-making, rather than to a specific engagement modality. We specify the chatbot's engagement modality (e.g., text, options, avatar) only when it is relevant.

4.1 Limitations of App-Only Support

During the workshops, participants engaged with the Mara Divas app to help them imagine how digital tools could support decision-making. AGYW were invited to share any questions they had after using the app. We describe their questions to reaffirm the motivation to explore chatbots and to contextualize the chatbot-related findings that follow.

The questions that AGYW raised fell broadly into three categories: (1) general knowledge gaps; (2) conceptual clarification questions; and (3) individualized, context-specific concerns. General knowledge questions included inquiries that were addressed in the app but had not been fully retained: "*Is it possible to get pregnant when you use the implant?*" (AGYW-3) and "*Do you take daily pills immediately after sex?*" (AGYW-1). AGYW had difficulty retaining all of the app information, possibly due to the limited time allotted during the activity. These questions also suggest that simply presenting comprehensive information does not ensure that users can retrieve the relevant details when uncertainties arise. The need was therefore an accessible way to revisit and clarify information in real-time.

Conceptual clarification questions demonstrated that AGYW synthesized information from the app and formed new questions. An AGYW participant asked, "*What is the difference between hormonal and nonhormonal family planning?*" (AGYW-1). The app describes which contraceptive methods are hormonal or nonhormonal, but does not explicitly detail how implications could differ. Another participant asked, "*Why is that using a male condom, there is a low chance of getting pregnant compared to a female condom? Could it be that female condoms are rare or putting it on is difficult?*" (AGYW-2). This participant's question engaged directly with app content describing pregnancy-prevention rates and sought deeper explanation and context. By proposing possible explanations for the difference in pregnancy-prevention rates, this participant was trying to make sense of the app's comparative information. These questions indicate that exposure to information can generate new uncertainties that static content cannot anticipate.

Individualized questions reflected AGYW's efforts to use the app's general information to gain more insight into personal situations. For instance, an AGYW participant realized that their experiences did not align with the standardized information presented in the app, and asked, "*Why do I experience certain side effects that are not stated in the app, such as strong headache, weight loss, regular yeast infections?*" (AGYW-2). This mismatch may create uncertainty about whether symptoms are expected or require professional attention. These tailored concerns illustrate the need for responsive, context-specific guidance that static app content cannot fully accommodate.

While AGYW raised a broad range of questions after using the app, they felt unable to ask pharmacists directly for a variety of reasons, The physical layout of a busy pharmacy setting limited opportunities for private conversation, making it difficult to ask sensitive or personal questions. Feelings of shyness and fear of judgment also discouraged open dialogue. Some AGYW perceived pharmacists as prioritizing sales over counseling that focused on what AGYW need, reinforcing hesitation to seek further clarification. Others worried about interrupting pharmacists during peak hours, feeling that their questions might be seen as disruptive. Thus, there is a need for AGYW to access other forms of real-time support. In the remainder of this section, we describe the findings that emerged specifically around chatbots.

4.2 Expectation for the Chatbot to Offer a Safe Space

Overall, AGYW and pharmacy workers thought that the chatbot could provide a safe space for AGYW to ask questions, discuss sensitive topics, and obtain unbiased guidance. The chatbot could help bridge the questions they have from using the app to making informed choices. As a result,

participants thought that AGYW would be more confident in their contraceptive knowledge and decisions.

4.2.1 Judgment-Free Space to Ask Questions. AGYW underscored the importance of the chatbot as a judgment-free space for discussing sensitive concerns, something they felt was difficult to find in face-to-face interactions. They anticipated that the chatbot would be free from the social scrutiny they associated with pharmacists or community members: "*[the chatbot is] giving me the space to keep on asking because the people out there…they're going to judge me*" (AGYW-3). The value of the chatbot therefore extended beyond receiving information. Its perceived lack of judgment lowered the interpersonal risks of disclosing sensitive concerns and enabled AGYW to continue asking questions without having to face another person's reactions.

Because of the low stigma of engaging with a chatbot, AGYW perceived the chatbot as offering greater control over the timing, pace, and depth of information seeking. Unlike the app's static content, the chatbot was expected to respond to questions as they emerged. Unlike a pharmacist, it would not require AGYW to wait for someone to become available or decide whether a question was sufficiently important or acceptable to address. In this way, the chatbot was seen as a tool that could expand AGYW's agency before counseling by allowing them to identify their concerns, clarify uncertainties, and determine what additional support they wanted from a pharmacist:

> "*Since when you are using the app and the chatbot, you will be asking your questions. Every single stone will be turned, you will be asking. But when you consider the app and the provider, you will still have some questions. But let me say the provider is held up. It will force you to wait until he is free, when he or she can attend to you.*" — AGYW-2

Pharmacy workers also recognized that the chatbot could provide an outlet for questions AGYW might not feel comfortable raising directly to them. This perspective suggests that pharmacy workers viewed the chatbot as a complementary tool that could reduce barriers in face-to-face counseling: "*I think [the chatbot is] a little more private and it will enable the AGYW to ask some private questions that they are not bold enough to come out and ask [the pharmacy worker]*" (Pharmacy-1).

These findings suggest that participants envisioned chatbots as potentially reshaping how sensitive information moves through care. Rather than initially disclosing all concerns to the pharmacist, AGYW could first explore them through the chatbot and decide whether, when, and how to raise them during counseling.

4.2.2 Provision of Unbiased, Comprehensive Information. AGYW perceived that some pharmacists recommended contraceptive methods based on the pharmacy's business interests or their personal beliefs about what was socially appropriate for individuals of AGYW's age. These perceptions made counseling feel less neutral and constrained AGYW's confidence that their preferences would be heard. However, AGYW associated the chatbot with greater honesty and neutrality and expected it to provide explanations that served their needs. As a result, AGYW expected the chatbot to be an unbiased, reliable information source that would help "*bridge that service gap because now I can just be and just get the information that I really need to get*" (AGYW-3). Even pharmacy workers acknowledged that they can be biased in the recommendations they give to their clients and recognized the strengths of chatbot use:

> "*I believe when they use the chatbot, the information they get will be unbiased. You see most of the time we are human, maybe somebody comes to you and you are very tired. You have dealt with so many people…You will want to push them on a particular kind of family planning which you want. So, I believe through the chatbot, the information they get is unbiased.*" — Pharmacy-1

AGYW wanted the chatbot to be honest, for example, about the disadvantages of using contraceptive methods. In particular, AGYW wanted the chatbot to clarify "*myths*" about contraception, which they understood as conflicting information or guidance from healthcare professionals and individuals using contraception. Oftentimes, beliefs about side effects were intertwined with anxieties about future fertility. AGYW therefore imagined the chatbot as a source that would debunk misinformation and explain the evidence and risks without exaggerating them:

> "*I don't know, it's a rumor or maybe if you go through TikTok, there are some doctors there, they usually say that the disadvantage of P-2 [short for Postinor-2 which is an emergency contraceptive brand in Kenya]...You can find that some ladies can stay three years before they conceive. So, they say that that can be a disadvantage of excessive use of P-2. And I would prefer, chatbot, to just be open and say that because I'm worried about that.*" — AGYW-2

4.2.3 Enhanced Confidence and Autonomy. AGYW perceived one of the main benefits of using the chatbot as gaining confidence in their knowledge and preparing for counseling. Rather than entering as clients dependent on the pharmacist for information, they could approach counseling with prior knowledge, a preferred method, and reasons for their choice, helping to change AGYW's role in counseling. AGYW imagined an opportunity to use the chatbot to resist pharmacist pressure and strengthen their agency, challenging existing power dynamic between themselves and the pharmacist:

> "*After using the chatbot, you have every knowledge that you want on the method that you feel is safe for you. So, even if the provider still tries to change your method, you are the one who knows whatever you discussed with the chatbot. And that is why you're settled for it.*" — AGYW-2

Similarly, pharmacy workers anticipated that providing AGYW with direct access to information through the chatbot could reduce their reliance on pharmacy workers and enable them to participate more actively in decisions about their care. However, the change in AGYW's role was not viewed as a threat to pharmacist authority: "*What I always believe in is information or knowledge is power. And whatever the chatbot is designed to offer is knowledge. So, in this, one way or another, we are empowering these young girls*" (Pharmacy-1).

4.3 Implications for Pharmacist Roles

The roles that AGYW wanted pharmacy workers to have post-chatbot use varied, depending on the questions AGYW had afterwards and what they wanted from the pharmacy workers. While the chatbot was expected to reduce pharmacy workers' workload, there were concerns about AGYW's dependency on the chatbot.

4.3.1 Building on AGYW's Newfound Knowledge. Some AGYW emphasized that pharmacists should be proactive in helping them choose a suitable contraceptive method after chatbot use. AGYW thought that the chatbot would help narrow down their choices and provide a starting point for counseling, such as requesting clarification on information from the chatbot they did not understand and following up on topics the chatbot referred them back to the pharmacist for. Both AGYW and pharmacists anticipated that counseling would build on the knowledge AGYW gained from the app and chatbot, allowing for more tailored and faster guidance. One AGYW thought that the app and chatbot could help them decide whether to use an injectable method, while the pharmacist could help them finalize a choice among the injectable options available at the pharmacy:

> "*After reading all [information on the app and chatbot], maybe [the pharmacy worker] can question which one is good for me, the [contraceptive method] for three years or for*

five years. Then he or she can tell you the difference or the effects of the two between the three years and the five years." — AGYW-3

This account suggests that the chatbot was expected to support initial exploration and preference formation. The pharmacist would be positioned as someone who helps AGYW interpret and apply knowledge gained through the chatbot by providing individualized clarification and resolving remaining uncertainty. In this sequence, AGYW believed that they could enter counseling as more informed and active clients.

4.3.2 Minimizing Pharmacist Involvement in Decision-Making. Some AGYW preferred brief exchanges with pharmacy workers after using the chatbot, to confirm prices, available brands, or method-use instructions. These participants expected the chatbot to help them finalize their contraceptive choice, reducing the need for extended counseling. One AGYW even hoped the chatbot would provide specific medication names so that they could request a method directly from the pharmacist.

Pharmacy workers saw the potential for a chatbot to manage workload and streamline workflow. For example, they thought that the chatbot could create more time for pharmacy workers to help other clients. However, not all pharmacists were comfortable with shifting too much counseling responsibility to the chatbot. One pharmacy worker worried that AGYW might become overreliant on the chatbot and disengage during counseling, disrupting rapport with the pharmacist and limiting opportunities for tailored guidance. While pharmacy workers appreciated the chatbot's potential to reduce workload and save time, they also wanted to stay connected to AGYW's concerns and maintain their role in person-centered care. One pharmacy worker suggested that the chatbot could assist them with better care, by presenting frequently asked questions (FAQs) to the pharmacist:

"*My concern would be if a client of mine identifies with the app and now, in reaction to this now, she becomes more closed to me and more open to [the chatbot]. How are you going to address that?...Is there any way that [the chatbot] is able to kind of collect some of the most asked questions, so that at the end of the day you also come up with some of the answers to most asked questions.*" — (Pharmacy-1)

At the same time, pharmacy workers felt assured that the chatbot would not replace them. They thought that human judgment and professional experience were essential for contraceptive counseling and viewed themselves as a critical factor that impacts AGYW decision-making. They anticipated that the chatbot would have limitations in addressing the full range of AGYW's emotional, contextual, and nuanced questions.

4.4 Potential Tensions Fueled by the Chatbot

Participants identified tensions that could arise or become amplified through chatbot use, underscoring the need to anticipate them during design. These included how information provided by the chatbot should align with pharmacists' guidance, whether boundaries should be placed on the topics it could address, and confidentiality of chatbot interactions. Some of these perspectives differed between AGYW and pharmacy workers.

4.4.1 Informational Conflict. Although participants did not identify conflicts between the chatbot prototype dialogues and the guidance pharmacists generally provide, pharmacy workers were concerned that the chatbot would promote information that conflicted with their practices. The potential for this conflict was evident in pharmacy workers' comments regarding content on the Mara Divas app. The app states that emergency contraception can be taken up to five days after unprotected intercourse, reflecting evidence-based guidance. However, pharmacy workers often advise clients that emergency contraception should not be taken after 72 hours, as this is the

timeline listed on many pill packages and approved by regulatory agencies. Pharmacy workers therefore emphasized the importance of aligning app/chatbot information with the guidance they provide:

> "*Our main point is to make it be strict, so that they can remain compliant. Like for example, if you say P-2, you still have till 5 days, the person will go and relax. Then they will come and tell you, 'you told me 3 days and I have read the app talks of 5 days and now I am pregnant'...But you know you have to be strict on the client. I told you this is the day you are supposed to come. Why have you come now? You know you can get pregnant. But if you give the client the option of knowing, I can relax for more days, then I believe they'll start...You'll end up having so many...cases of pregnancy.*" — Pharmacy-1

Informational conflict can also arise between the app/chatbot and community-wide beliefs. In Kenya, concerns that contraception can cause permanent infertility are widespread, particularly for injectable contraception such as depot medroxyprogesterone acetate (DMPA), or "depo" [56]. While the app provides evidence-based guidance suggesting that depo does not cause infertility but can delay return to fertility [60, 62], pharmacy workers often refuse to provide depo to AGYW, especially those who are unmarried or have not had a child, leaving AGYW to wonder what is medically accurate. An AGYW participant noticed how the evidence-based guidance on the app differed from the recommendation they typically received from healthcare professionals: "*This [information on the app] for depo, not everyone but most times when I go to the hospital, you find they tend to discourage you, that it can lead to infertility or something. Is that true?*" (AGYW-1). This is another example of a "myth" that AGYW encountered and wanted the help to clarify. This quote suggests that healthcare professionals themselves could reinforce beliefs about infertility, making it difficult to distinguish medical caution from misinformation. This also points to the potential for informational conflict between the chatbot and the pharmacist: when guidance differs, AGYW may be left to decide which source to trust, potentially complicating rather than resolving uncertainty.

4.4.2 Informational Boundaries. AGYW and pharmacy workers had different views on what should or should not be discussed with a chatbot. When pharmacy workers were asked what questions the chatbot should not answer, they identified abortion-related procedures, including drug names, brands, and instructions for use. Their concerns reflected not only the sensitivity of abortion, but also their view that access to detailed procedural information should remain under professional oversight. They emphasized the importance of limiting the chatbot's scope because responsibility for care ultimately rested with pharmacy workers:

> "*In terms of professionalism, there's defined roles...I really think there's certain information that I would not let the adolescents have...I think when it comes to now, the details, in terms of offering all the services, how to offer them, I think from that bit, it can be left for the providers themselves.*" — Pharmacy-1

On the other hand, AGYW felt that they should be able to ask the chatbot anything without boundaries. Some thought that they should discuss their concerns with the chatbot as much as possible so that it could address all of their questions. When AGYW were asked about whether they would want abortion-related information from a chatbot, one participant expressed that they wanted to learn about abortion medications from the chatbot and then receive services in another location. This account shows that the chatbot was viewed as a means of separating information seeking from service provision:

> "*Where I come from, like the lady who works in the pharmacy, she is...I don't know if I should say she's scary, rude or a snitch. So, I prefer asking the chatbot or I just move to another pharmacy that is very far from that one. I think that's the only way.*" — AGYW-2

4.4.3 Privacy and Utility. Many AGYW identified that the avatar chatbot could not be privately used because the conversation would be audible to the pharmacist. When discussing the text chatbot and options chatbot, while some AGYW did not mind the pharmacy worker seeing their chatbot conversations, many wanted their privacy preserved and suggested the deletion of conversation history. This perspective was reflected in AGYW's perceptions of the chatbot's role in their care: rather than viewing it as a shared tool between themselves and pharmacists, they wanted it to be a personal resource to independently explore options and form preferences prior to counseling:

> "*[The chatbot is] for me like the information is meant to help me, once I've gotten the help then I don't see the need of [the pharmacist] knowing whatever I did there. His focus should be on what I have discovered, whatever methods I am okay with after reading everything.*" — AGYW-1

On the other hand, pharmacy workers suggested that access to chatbot-AGYW interactions could strengthen person-centered counseling. Some wanted to leverage the chatbot to surface concerns that AGYW might hesitate to share directly with pharmacists, allowing them to better understand AGYW priorities. For example, in discussing the text chatbot, one pharmacy worker said that they wanted to access conversation history to know which contraceptive method an AGYW was leaning toward and to align counseling with those preferences, seeing this as a way to preserve AGYW autonomy:

> "*We are not supposed to influence the informed consent of the client, so we are not supposed to choose for the client. It is the client to choose. So, if you go in and bulldoze your suggestion, then you're just supposed to guide based on whatever the client wants. So, based on that, you will give whatever they have decided because it is the informed choice.*" — Pharmacy-1

4.5 Chatbot Design Suggestions

Participants discussed preferred modality, interaction patterns, and conversational tone, as well as who can benefit from the different modalities.

4.5.1 Embodying Characteristics of an Ideal Pharmacist. Both AGYW and pharmacy workers wanted the chatbot to embody characteristics of a healthcare provider. When discussing the avatar prototype, pharmacy workers suggested that it should look like a healthcare provider to signal that its information came from a trustworthy medical source. For AGYW, the chatbot also represented an opportunity to experience ideal contraceptive counseling interactions. Many AGYW described female pharmacists as less approachable than male pharmacists, describing them as more judgmental, less confidential, or prone to adopting a maternal role that discouraged certain contraceptive choices. However, they wanted the avatar chatbot to present itself as a female pharmacist with a professional demeanor, suggesting that AGYW wanted the chatbot to portray interactions with the pharmacist that they desired but lacked in real-life interactions:

> "*...an indication that they are hearing, they're listening...Indicate they are friendly and I also want the response to be simpler and understandable...It looks like professional attire, something like...a lab coat. It will make me feel that whatever information I am getting is from a provider.*" — AGYW-1

Some AGYW preferred that the avatar chatbot were portrayed as a robot rather than a person to indicate that it was non-judgmental, impartial, and free from social biases, as shown with sketches made by AGYW in Figure 4. In discussing conversational tones, some AGYW preferred a human-like, empathetic tone, such as the one presented by the avatar chatbot, contrary to how they perceived pharmacy workers' tones during consultation. Others preferred a direct tone that went straight to the point, which was portrayed in the text chatbot and options chatbot.

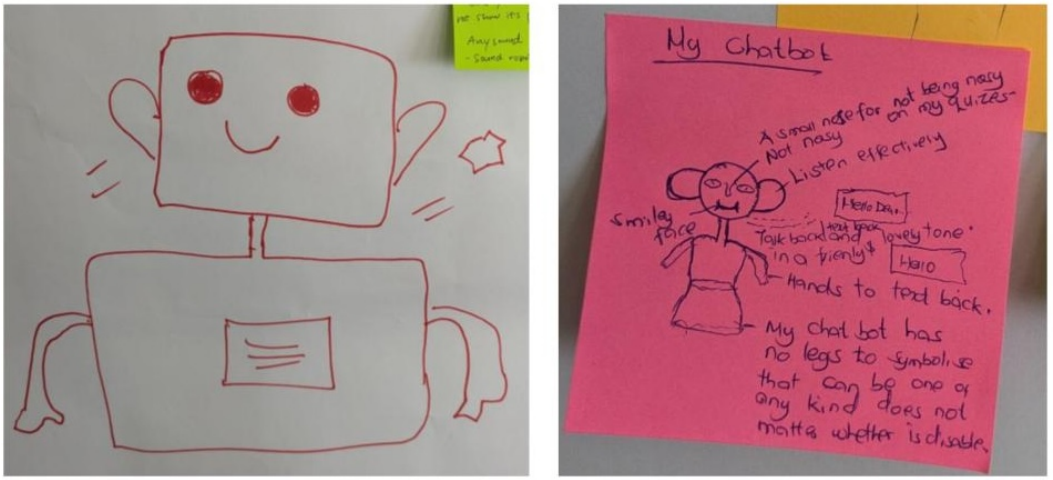


Fig. 4. Drawings of an ideal chatbot persona by AGYW participants.

When asked what questions they wanted the chatbot to ask, AGYW emphasized that conversations should be tailored to their contraceptive knowledge, interests, and concerns. They explained that pharmacy workers rarely checked in on how they were feeling, especially when busy attending to other clients. AGYW valued the possibility of a chatbot pacing the conversation around their needs and inviting follow-up questions:"*It should ask if the patient is satisfied or does she have any other question*" (AGYW-2).

4.5.2 Designing for Different AGYW Groups. Participants thought that the chatbot would be suitable to a wide range of AGYW, especially those who are shy, but that the three prototypes might appeal to different groups of AGYW. When asked who they would recommend each prototype to, participants' responses revealed how chatbot design choices could shape which AGYW are able or willing to access and use the chatbot. For the text chatbot, participants anticipated that the main challenge for AGYW, beyond digital familiarity, would be the need to clearly structure and verbalize thoughts and questions:

> "*The majority of them I know wouldn't have the real words to put across…maybe the redirection by the app can actually put the mind, 'actually this is what I mean,' and actually help the app to actually ask the right question and get the appropriate answer or the correct answer…I don't know if it's in terms of communication or putting across the question intended. I think there must be a challenge putting it across in terms of words, in statements written.*" — Pharmacy-1

The options chatbot was seen as a potential solution because it could allow AGYW to choose from predefined conversation paths without having to write out their own questions. AGYW also expressed that this chatbot was preferred for someone who was anxious about asking questions. However, participants felt that AGYW with greater confidence and literacy might prefer the text or avatar chatbots because these formats allowed them to ask questions more freely. AGYW suggested adding autocorrect and sentence-completion features to the text chatbot to help users articulate their questions.

The avatar chatbot was seen as a way to expand accessibility to a broad range of AGYW due to its audio- and speech-based interaction. Participants thought that the avatar chatbot was most

suitable for AGYW "*who is confident enough to express themselves, but are not comfortable to express themselves to someone one-on-one*" (AGYW-1). However, participants were concerned about voice-based interactions like the avatar chatbot, as other clients or pharmacists may overhear conversations. To address this concern, AGYW suggested that the chatbot incorporate elements from all three prototypes, allowing users to choose the modality that best suits their needs. One AGYW suggested the combination of text, options, and avatar (audio/speech) taking inspiration from how they used ChatGPT.

5 Discussion

Overall, participants had a positive attitude towards chatbot-supported decision-making in the pharmacy setting. They agreed that chatbots could help bridge the service gap between the app and the pharmacy worker by offering a safe space for AGYW to ask sensitive questions and build confidence to talk to pharmacists, echoing the benefits of chatbots recognized in prior work [5, 31, 68]. At the same time, our findings reveal a broader relational tension that could arise or become amplified through the integration of a chatbot into pharmacy-based contraceptive care: the redistribution of authority, reliance, and control across AGYW, the chatbot, and pharmacists. Many AGYW envisioned using an unrestricted chatbot to learn about topics they hesitated to ask a pharmacist and narrow their contraceptive methods, making them active participants in decision-making. While AGYW agreed that pharmacists are needed in the care pathway, many perceived pharmacists as profit-oriented or unreliable and saw their role as confined to the final stages of care, for example, to select a brand, confirm the final method, and facilitate a transaction. In this arrangement, the chatbot becomes a trusted space for knowledge building and deliberation, potentially shifting authority away from pharmacists. This redistribution of authority also raises questions about who should govern the chatbot interaction itself. Pharmacists sought to establish boundaries around what the chatbot could discuss. Pharmacists also wanted access to conversations to support counseling, whereas AGYW wanted the chatbot to offer privacy and freedom to explore sensitive concerns. The relational tension therefore concerns how introducing the chatbot renegotiates who can shape contraceptive decisions, determine what information may be accessed, and control what information is shared within the care relationship.

We discuss chatbot design choices that can navigate these relational tensions, focusing on how chatbots can account for community beliefs and balance AGYW needs with pharmacist expectations. We also reflect on the strengths of situating client-facing AI decision-support tools to extend their impact to a diverse group of AGYW. We propose these design considerations to provide guidance to chatbot designers and CSCW and HCI researchers investigating chatbots for sensitive health contexts.

5.1 Navigating Community Beliefs

Our findings suggest that community-wide beliefs about contraception shape how AGYW navigate access to care. Beliefs about contraceptive risks, some medically inaccurate, were strongly present at the community level, including concerns that the injectable contraception such as depot medroxyprogesterone acetate (DMPA), also known as depo, could lead to permanent infertility [56, 84]. However, evidence indicates that depo does not cause infertility, though injectable contraception is associated with prolonged anovulation among some users, delaying the return to fertility [60, 62]. Thus, the belief that depo causes infertility reflects both misinformation and a legitimate concern about delayed fertility return. AGYW's options are further constrained when such beliefs are reinforced by service providers, especially when pharmacists refuse depo to unmarried AGYW [17, 88]. This context explains why AGYW were interested in using the chatbot to clarify "myths" about the emergency contraception and depo. AGYW imagined the chatbot as a source of clarification free

from judgment, stigma, and gatekeeping, whereas pharmacists were seen as reinforcing beliefs that could restrict access to the services AGYW sought. This contrast further illustrates the earlier tension over how the chatbot impacts how authority and reliance are distributed.

Building on the work by Kaur and Singh [33] which argue that chatbots should support knowledge building, we propose conversation pathways that provide medically accurate information while acknowledging the influence of community beliefs, a challenge recognized in prior research on sensitive health chatbots in LMICs [12]. Rather than dismissing beliefs about infertility, the chatbot could validate AGYW's concerns, acknowledge that these beliefs are common, and then offer clear information to support informed decision-making. Although AGYW wanted the chatbot to help distinguish "myths" from "facts," they may not always know which beliefs are inaccurate. The chatbot could therefore invite AGYW to share beliefs they have encountered: "*Many AGYW are worried about the impact of depo on fertility. Have you heard anything similar?*" It could also present FAQs framed as "*Is it true that...?*" with corresponding answers. Rather than simply labeling beliefs as myths or facts, the chatbot could use them as entry points for dialogue, supporting reflection on why these beliefs exist and how they shape decision-making and information seeking [12, 68]. While pharmacist-level barriers may limit immediate changes in access to certain methods, the chatbot has potential to support incremental, individual-level change by filling in informational gaps and strengthening AGYW's confidence in making informed choices. There is potential for the chatbot to empower AGYW to become confident, prepared participants and challenge existing power dynamics.

At the same time, chatbot-mediated knowledge building risks reinforcing relational tensions. By simply positioning the chatbot as a source that can clarify medical evidence and challenge beliefs communicated by pharmacists, its design could further shift authority away from the pharmacist, potentially deepening mistrust rather than mediating AGYW-pharmacist relationships. Designers should therefore consider how chatbot guidance can be accompanied by handoff mechanisms that help AGYW discuss discrepancies with pharmacists without requiring them to choose one source of authority over the other. In the next section, we discuss specific opportunities for designing chatbots in this way.

5.2 Positioning the Chatbot as a Shared Technology between AGYW and Pharmacists

The primary goal of the envisioned chatbot is to address the informational needs of AGYW. However, a chatbot in pharmacy-based care would not be used in isolation. Pharmacists are key *"gatekeepers"* [80] whose workflows, professional responsibilities, and willingness to support the technology may shape whether and how it becomes integrated into care. Designing solely around AGYW's preferences could overlook how the chatbot affects pharmacists' roles and the broader care relationship.

Building on the work by Kim et al. [34] which frame decision-support AI as a "*shared technology*" between clients and providers, we conceptualize the chatbot as a mediator between AGYW and pharmacists to enable shared decision-making. This framing is particularly important in healthcare, where AI-mediated decision-support can shift authority and trust away from human providers [72, 89], especially when AI-generated responses are perceived as more valid or satisfactory than professional input [76]. Our findings indicate that such shifts are plausible in the pharmacy context. One pharmacist was concerned that AGYW might become closed off during counseling and rely more on the chatbot for decision-support. AGYW's accounts suggest that this concern was well-founded, as some envisioned a limited pharmacist role post-chatbot.

With considerations for such unintended consequences of chatbots, we reflect on how relational tensions could be alleviated through chatbot designs that build on participants' insights and experiences. Specifically, we discuss opportunities and limitations of a chatbot to mediate between

AGYW's desires for privacy, autonomy, and information, and pharmacists' expectations around medical responsibility and professional authority. In doing so, we contribute to the dialogue in CSCW and HCI on how to design technologies that balance supporting, leveraging, and extending client-provider communication and interaction [34, 39, 40].

5.2.1 Supporting Counseling Efforts without Compromising Privacy. Many AGYW wanted their chatbot conversations to remain hidden from pharmacists because they would use the chatbot to ask questions they hesitated to raise in person, echoing findings from other health contexts [68, 69, 97]. Pharmacists, however, wanted access to conversation histories to tailor counseling to AGYW preferences. Giving pharmacists access to individual conversations could erode AGYW trust and reduce their willingness to ask candid questions. This conflict further exposes the relational tension around authority, reliance, and control. The chatbot's value to AGYW depended partly on its separation from pharmacist oversight. Giving pharmacists access to those conversations could collapse that boundary, prompting self-censorship and reproducing the same dynamics that made AGYW avoid raising certain concerns in-person.

One solution is to share aggregated FAQs with both pharmacists and AGYW. As a pharmacy worker suggested, FAQs could reveal common interests and knowledge gaps, helping pharmacists tailor counseling to AGYW concerns and practice person-centered care. This would help preserve pharmacists' role as active contributors to counseling, and keep their guidance responsive to the concerns AGYW are actually raising. For AGYW, FAQs could help them realize concerns and questions raised by their peers: "*Here are questions that are commonly asked by your peers. Look through this or ask me a different question!*" Another approach is to let AGYW choose which topics they are comfortable sharing and which they prefer to keep confidential. More broadly, preserving AGYW's privacy while actively supporting pharmcists in building on AGYW's newfound knowledge positions the chatbot as a facilitator of person-centered care and engaged counseling.

While our work focuses on the contraceptive pharmacy context, similar tensions between clients' privacy needs and institutional desires for visibility and monitoring are visible in other multi-stakeholder healthcare contexts [29, 30, 69]. Client-facing AI decision-support tools often sit at the intersection of personal sensemaking and institutional care, where misaligned expectations around data sharing can undermine trust and participation. These tensions are especially pronounced in sensitive health contexts, where clients may disclose stigmatized experiences to a chatbot that they would avoid sharing with community members or providers due to fear of judgment [68]. We therefore highlight the importance of designing chatbots that support selective information sharing, preserving private spaces to articulate questions and concerns while enabling providers to benefit from aggregated insights.

5.2.2 Modeling Ideal Communication. Our findings show that AGYW and pharmacy workers both wanted the chatbot to embody characteristics of a healthcare professional, though for different reasons. When ideating on the avatar chatbot, AGYW preferred a persona resembling a friendly and professional female pharmacist, which are qualities not consistently available in their interactions with human pharmacists. Pharmacy workers similarly wanted the avatar chatbot to present itself as a healthcare professional so that AGYW would view its guidance as credible and trustworthy. These findings suggest that the chatbot's persona does more than affect user engagement: it may shape how AGYW imagine what professional, supportive contraceptive counseling should look like.

Prior work suggests that clients may perceive chatbots as extensions of a healthcare provider's persona, indicating that chatbots can shape future client-provider communication and relationships [39]. Building on this insight, we argue that the contraceptive chatbot could foreground interactional qualities that are important to contraceptive care for AGYW, such as active listening,

reassurance, and appropriate deference to professional judgment. These qualities may help AGYW imagine what constructive engagement with pharmacists can look like. At the same time, by modeling a supportive interaction with a chatbot embodying a healthcare professional persona, AGYW may feel more willing to open up to the pharmacist [39], reinforcing pharmacists as credible sources of guidance. However, designing the chatbot to embody ideal qualities could further incentivize overreliance, underscoring the importance of designing interactions that reinforce the value of in-person counseling, which we discuss next.

5.2.3 Managing Overtrust and Medical Nuance. AGYW's perception that the chatbot was more knowledgeable and therefore more reliable than a pharmacist implies that any inaccuracies generated by the chatbot could carry disproportionate influence, requiring guardrails. Building on CSCW work arguing that chatbots should support nuanced, context-aware conversations rather than rely solely on censorship [31], we examine opportunities and challenges of communicating contraceptive nuance.

One nuance concerns how medically accurate information should be communicated when local practices slightly differ from evidence-based guidance. While in most cases, chatbots should prioritize providing medically accurate information, our findings reveal that certain situations warrant providing information that aligns better with accepted social practices. In Kenya, pharmacy workers commonly advise that emergency contraception be taken within 72 hours, consistent with product labeling and regulatory guidance, while evidence-based guidance may extend this window to five days, with the disclaimer that it is most effective as soon as possible after intercourse. Pharmacy workers wanted the app and chatbot's guidance on emergency contraception timelines to align with the information pharmacists provide to clients. Aligning with accepted practice in this case can reduce confusion, reinforce uptake of recommended care [12], and ensure that the chatbot supports rather than contradicts pharmacists.

Another nuance is that embodied experiences may not align with standardized medical information. An AGYW participant expressed that they experienced side effects that were not listed in the app and wanted to know whether this was concerning. If a chatbot contradicted this experience by saying that such side effects are not possible, it could amplify confusion or worry. Instead, the chatbot could validate the concern and refer them to a pharmacist: "*Most people experience X side effects. While not many people experience the side effects you have, it is important to pay attention to how you feel and talk to a professional about it.*"

A third nuance involves communicating uncertain medical evidence without overstating causality. Chatbots may struggle to answer questions such as, "*Does depo cause depression?*" Evidence suggests that depo may be associated with mood changes for some people, but the evidence does not support a causal relationship [8]. Yet, a simple online search often yields definitive statements that it causes depression. A chatbot that mirrors such oversimplification risks misrepresenting the evidence. Distinguishing the difference between "is associated with" and "causes" requires context-sensitive communication that a chatbot may not deliver consistently or users may not interpret as intended.

These cases signify the importance of the chatbot acting as a partner in the care team [34, 70, 74], that aligns with safe and socially accepted practices and refers AGYW to pharmacists or other appropriate providers. These boundaries can support AGYW's information seeking while mitigating overtrust and misinterpretation of chatbot responses, and preserving pharmacists' role as the primary point-of-care.

5.2.4 The Limits of Designing for a Shared Technology. Lastly, we consider a case that highlights challenges around the governance of chatbot interactions, revealing limitations of designing a chatbot as a shared technology between AGYW and pharmacists. Pharmacy workers opposed the dissemination of abortion-related information through the chatbot, emphasizing that abortion

should be discussed with a pharmacist. In contrast, AGYW wanted access to comprehensive information through the chatbot, citing concerns about being judged by pharmacists or receiving biased guidance. For AGYW, the chatbot represented a safer entry point for seeking information that they might otherwise avoid.

While a chatbot can be designed to avoid drug names or instructions and instead connect AGYW to credible sources of care such as a trusted hotline number, this choice comes with social consequences. If community members perceived the chatbot as endorsing abortion, it could provoke backlash or create reputational and interpersonal risks for pharmacy workers. This creates a difficult trade-off: deferring to pharmacists' preferred boundaries could reproduce existing barriers to information, whereas prioritizing AGYW's needs could impose social costs on the pharmacy workers expected to support the technology. Thus, these competing positions cannot necessarily be resolved by designing the chatbot to accommodate one of or both stakeholder groups.

5.3 Reaching a Wide Range of AGYW

The feedback on the chatbot prototypes highlights important considerations about who chatbots can support and who they may exclude. Building on questions posed by CSCW and HCI researchers on reaching a wide audience in disseminating sensitive health information [33, 87], we examine a central question: *how can a chatbot be designed to extend impact to a wide range of AGYW?*

5.3.1 Offering a Range of Engagement Modalities. AGYW are a diverse group, for whom a one-size-fits-all approach risks excluding those with differing needs or capabilities [87]. AGYW in their early 20s demonstrate higher levels of digital and language literacy, and greater contraceptive knowledge than teenagers; these differences shape their preferences for technology modalities and information-seeking behaviors [61]. Our findings reiterate this diversity: the three prototypes were viewed as suitable for different subgroups of AGYW, depending on their digital literacy, health literacy, language proficiency, and confidence in self-expression. Participants thought that the options chatbot would be most useful for AGYW who struggle to formulate questions, echoing findings from prior work on chatbot modalities [68]. By contrast, the text and avatar chatbots may suit AGYW with the confidence and language comprehension skills to articulate their thoughts, while the avatar chatbot prioritizes accessibility by removing the need for reading and writing proficiency. Recognizing the need for diverse choices, AGYW suggested a flexible approach: offering multiple modalities and allowing users to choose based on their needs and comfort.

Ensuring accessibility across modalities also depends on language support, highlighting the need to scale natural language processing to meet the linguistic needs of Kenyan AGYW. Specifically, the chatbot should support mixed language use and "Sheng," a slang blending English, Kiswahili, and regional languages, which is a critical part of everyday life and youth identity [18]. Chatbot designers must account for language and modality choices not only at the country- or cultural-level, but also in ways that address the specific needs of adolescents.

5.3.2 Strengths of Situating Chatbots in an Broader Care Ecosystem. The variability of AGYW underscores the importance of situating chatbots within a broader ecosystem of care to ensure that AGYW have sufficient support. We discuss broader design considerations that extend beyond chatbot interactions to describe how the possible integration of a chatbot into existing care environments will shape its accessibility and potential impact.

Adolescents in LMICs, including in Kenya, often lack consistent access to personal devices and internet connectivity and have varying digital literacy levels [45, 61]. This creates an important access barrier for SRH chatbots for youth that assume private mobile phone ownership, sustained connectivity, or prior digital experience [53, 54, 68, 75, 90]. Our envisioned chatbot addresses this challenge by shifting access from the individual device to the care setting: rather than requiring

AGYW to own a smartphone or independently seek out a chatbot, the system would be accessed via a tablet provided in the pharmacy setting.

Embedding the chatbot in the pharmacy setting does more than make it physically accessible. It integrates chatbot use into an existing contraceptive care pathway, allowing the system to function as shared care infrastructure rather than as an isolated digital tool. In our envisioned workflow, the chatbot would be used after the Mara Divas app which delivers core information on contraceptive methods, and would serve as a complementary platform to address questions that emerge after app use. This is particularly important because AGYW raised a wide range of post-app questions that required real-time clarification, reassurance, or contextualization. As a shared technology used in the contraceptive care pathway, the chatbot enables handoffs to human professionals, supporting shared decision-making directly after chatbot use. Questions that surface during chatbot interactions can be addressed through in-person counseling, helping AGYW contextualize information and navigate next steps [86]. This framing highlights how our work extends prior research on SRH chatbots for youth in LMICs. While prior systems have shown how chatbots can deliver private, youth-friendly SRH information [53, 54, 68, 75, 90], our work examines how chatbot support can coordinate information seeking, human counseling, and service provision within the complex realities of service delivery settings. This perspective shifts the design objective from optimizing AI systems in isolation toward enabling flexible handoffs and shared decision-making by clients, healthcare providers, and AI. As AI-enabled decision-support tools become more prevalent in healthcare, ensuring alignment within the surrounding care ecosystem will be as critical as technical accuracy, performance, or usability.

5.4 Limitations and Future Work

This study was conducted in a single county in Kenya, and its findings may not be generalizable to the entire country. We acknowledge a major limitation of implementing chatbots in Kenya: common chatbots are trained on English data, which can lead to inferior performance in non-English languages [15, 43, 91]. Although efforts are growing to expand datasets in Dholuo and Kiswahili [2, 37] and develop chatbots in Kiswahili [51], supporting low-resource languages and multilingual performance remains a challenge.

Future work should examine the practical challenges of integrating chatbots into constrained retail settings. Many commercial healthcare outlets in LMICs lack waiting areas and private counseling spaces [10], raising questions about how technologies can fit into these contexts [61]. In crowded pharmacies, chatbot use would require additional time and space, potentially reducing the number of clients that pharmacy workers can serve. Addressing these constraints may require incentives for pharmacy workers to adopt or promote the chatbot, such as SRH training, financial support, or airtime. However, incentives carry ethical concerns, as they could undermine intrinsic motivation, prompting providers to focus narrowly on incentivized services [95] and disrupting person-centered care and client-provider relationships [47]. These risks are important when working with young clients, who may be more vulnerable to coercion. Future work must ensure that incentive structures do not compromise trust, autonomy, or care quality.

6 Conclusion

AGYW in Kenya and more broadly in sub-Saharan Africa lack contraceptive decision-support resources that are tailored to this population's needs and preferences. To contribute to the improvement of contraceptive education and contraceptive autonomy for a vulnerable population, we explored how chatbots could be designed to aid decision-making for AGYW while considering the implications for placing chatbots into the pharmacy setting in Kenya where SRH services are offered. Through co-design workshops centered around chatbot prototypes, we gathered insight

into perceived opportunities, concerns, and preferable futures of chatbot-supported contraceptive decision-making. Our findings highlight expectations that a chatbot could offer a safe space for AGYW to privately ask sensitive questions and become confident participants in decision-making. At the same time, introducing a chatbot into pharmacy-based care could amplify relational risks by shifting trust and authority away from pharmacists, narrowing pharmacists' roles, and creating new tensions around what topics the chatbot should or should not address.

Our work contributes concrete design guidelines for chatbots in sensitive health contexts. We identify design considerations for navigating community beliefs when these beliefs are reinforced within pharmacy practice, positioning chatbots as shared technologies between AGYW and pharmacists to promote shared decision-making, and anticipating the limitations and unintended consequences of chatbot use. More broadly, this work builds on research on SRH chatbots for youth in LMICs by examining how chatbots embedded within existing care ecosystems surface distinct considerations around care coordination, privacy, agency, trust, and stakeholder roles. We hope that this work provides guidance to chatbot designers and HCI and CSCW researchers on design principles for sensitive health domains and encourage the CSCW community to look beyond technology in isolation and consider the strengths and trade-offs of integrating tools into existing health systems.

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A Pre-Workshop Questionnaire

A.1 AGYW

(1) Demographic information

(a) Age in years for AGYW
(b) What is your highest level of education?
  (i) No schooling
  (ii) Primary school, not complete
  (iii) Primary school, complete
  (iv) Secondary school, not complete
  (v) Secondary school, complete
  (vi) Post-secondary school
(c) Are you still attending school?
  (i) Yes
  (ii) No

(2) Technology familiarity
(a) Do you have access to a mobile phone?
  (i) Yes
  (ii) No
(b) Do you own the phone or is it shared?
  (i) Own
  (ii) Shared
(c) With whom do you share the phone?
  (i) Parent
  (ii) Boyfriend/partner
  (iii) Other family member
  (iv) Other
(d) What kind of phone is it?
  (i) Smartphone
  (ii) Not a smartphone
(e) How often do you use mobile devices (like a phone or tablet) in your daily life?
  (i) Multiple times a day
  (ii) At least once a day
  (iii) At least once a week
  (iv) Rarely
(f) What is your level of comfort using mobile apps?
  (i) Extremely comfortable
  (ii) Comfortable
  (iii) Neutral
  (iv) Not very comfortable
  (v) Not at all comfortable

A.2 Pharmacy Worker

(1) What is your age (years)?
(2) Gender
(a) Male
(b) Female
(3) What is your highest level of edcuation?
(a) Primary incomplete
(b) Primary complete
(c) Secondary complete
(d) Technical college/trade school

(e) Diploma
(f) Bachelors/degree
(g) Doctorate
(h) Other (specify)

(4) What is your professional title?
(a) Pharmacy technician
(b) Pharmacist
(c) Pharmacy owner
(d) Pharmacy assistant
(e) Other (specify)

(5) How long have you been working in the pharmacy setting?
(a) Less than 1 year
(b) 1-2 years
(c) 2-4 years
(d) 5 or more years

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