

Digital Safe Haven”: Exploring Conversational AI as an Emotionally Supportive Conversational Space for Rural Adolescent Girls in Sichuan, China

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 Cite This: <https://doi.org/10.65638/2978-5634.2026.2.03>

ABSTRACT: *Background:* Conventional sexuality education in rural China is constrained by institutional and cultural barriers, and adolescent girls lack psychologically safe spaces to engage with menstrual health information.

Objective: This qualitative exploratory pilot study questions whether conversational AI can act as an emotionally safe, anonymous, non-judgmental environment, a “Digital Safe Haven,” for rural adolescent girls.

Method: Semi-structured interviews and AI interaction sessions with 18 junior-high school girls aged 12–15 in Rong County, Sichuan Province. Purposive sampling with principal nomination; recruitment ceasing at thematic saturation. Reflexive thematic analysis employed for analysis of data.

Results: The girls in our study felt shame in relation to menstruation and actively hid it. When interacting with AI, most found affective barriers lessened and self-disclosure easier, but negative responses (robotic answers, distrust, perfect preference for human support) were also accounted for.

Conclusion: We cautiously suggest conversational AI may be a “Digital Safe Haven” for some girls, and propose a three-pillar interpretive lens (Psychological Safety, Online Disinhibition, Affective Engagement) as a spade contextual lens for the time being. Our contribution is less about theorizing everything anew as it is about extending established concepts into an underexplored socio-cultural and educational context.

Keywords: Conversational AI, Menstrual stigma, Rural education, Psychological safety, Affective engagement, Adolescent girls, Qualitative exploratory study.

1. INTRODUCTION

1.1. Global Menstrual Stigma

Menstruation is a biological secretion, yet remains deeply stigmatized in most cultures. Johnston Robledo and

Chrisler (2013) called this menstrual marking the social meaning given to menstruation as dirt, as shameful, and

Received: May 03, 2026
Accepted: June 02, 2026
Published: June 11, 2026

as something to be hidden. Menstrual stigma functions through secrecy (the sense one should hide the signs of menstruation), pollution beliefs (the ideas that menstrual blood is contaminating), and fear of bodily leakage (the idea that one's control over one's body is lost), Johnston Robledo and Chrisler (2013) write. [N]o matter the level of education, menstrual stigma negatively impacts attendance, psychological wellbeing and social participation within low and middle income countries (Hennegan *et al.*, 2019). The aim of menstrual health management should be, Sommer *et al.* (2015) argue, to ensure girls 'experience menstruation comfortably, safely, and without shame.' School however is often a place where stigma can be reproduced (McMahon *et al.*, 2011, Mason *et al.*, 2013).

■ 1.2. Sexuality Education in Rural China

Rural menstruators in China, and particularly in Sichuan province experience the same stigma. Although health policy supports comprehensive sexuality education, there is inadequate implementation in rural settings (UNESCO, 2018). Chandra Mouli and Patel (2017) found that in low and middle income countries girls often lack accurate menstrual knowledge and face shame based barriers to seeking information. Rural schools offer an "organized silence" (Zhang & Dasgupta, 2021): teachers skip the chapters on puberty, girls refer to themselves using euphemisms, and the boys' teasing is normalized. Help seeking behaviour is almost non-existent (Mason *et al.*, 2013). Even girls who know the basic facts do not seek help (Li *et al.*, 2020). Psychological safety is necessary for good sexual education (UNESCO, 2018)

■ 1.3. Rise of Conversational AI in Education

Conversational AI has great potential for health education: chatbots alleviate depression (Fitzpatrick *et al.*, 2017) and encourage behaviour (Laranjo *et al.*, 2018). A mixed methods study by Gabarron *et al.* (2021) finds that sexual and reproductive health professionals see promise in AI chatbots; however, accuracy and empathy remain concerns. Looking more recently at AI's education role, Tlili *et al.* (2023) overall sees "guardian angel" and "devil" in ChatGPT, with emphasis on over reliance and misinformation dangers, as well as the need for true pedagogical links—elements that menstrual stigma specifically hasn't been able to find its way into conversational agents.

■ 1.4. Research Gap and Research Questions

Framed as a qualitative exploratory pilot study, we ask the question, Can conversational AI act as a "Digital Safe Haven" for rural Sichuan girls to access menstrual health

information without shame? Our contribution is not a novel psychological framework; rather, we apply and integrate existing psychological concepts to help contextualize our understanding of how AI can act to lower affective barriers in a stigmatized topic of learning. The specific research questions are:

- **RQ1:** How do rural adolescent girls experience menstrual stigma within educational settings (school, family, peers)?
- **RQ2:** How do participants perceive conversational AI as a source of menstrual knowledge and emotional support?
- **RQ3:** In what ways can conversational AI function as a "Digital Safe Haven" for sensitive sexuality education?

■ 2. LITERATURE REVIEW

■ 2.1. Menstrual Stigma as an Affective Barrier

Research on menstrual stigma describes the "affective barriers" to engaging with information, involving beliefs about the need for secrecy, pollution, and fear of bodily leakage (Johnston Robledo & Chrisler, 2013; Schooler *et al.*, 2005). Girls hide evidence of menstruation and do not ask questions (McMahon *et al.*, 2011; Mason *et al.*, 2013), and the majority of interventions focus on sanitary products or just providing factual information, neglecting the emotional dimension.

■ 2.2. The Chinese Rural Context: Organized Silence

In rural China, a multi layered "organized silence" prevails: teachers are untrained, peers mock them by weaponizing their menstruation and left behind children do not have a parent to turn to (Zhang & Dasgupta, 2021). Even when girls are given basic facts, they do not seek help (Li *et al.*, 2020). Psychological safety is necessary for quality sexuality education (UNESCO, 2018). While it is not a focus of this review of the literature, the lack of empirical English language studies in the last half decade studying rural China's menstrual education further motivates the need for this study.

■ 2.3. Conversational AI in Health and Education

AI in education research has blossomed (Zawacki Richter *et al.*, 2019; Kasneci *et al.*, 2023), but it seems focused on the STEM topics. Some conversational agents for health appear promising (Fitzpatrick *et al.*, 2017; Laranjo *et al.*, 2018), but Gabarron *et al.* (2021) notes that professionals are wary of AI chatbots for sexual and

reproductive health desirous for the accuracy and empathy provided by healthcare professionals, as well as worries about data privacy. To our knowledge, no studies have tested these types of interventions in rural Chinese schools. Contradicting this elation, some researchers caution against too much optimism because of low engagement, privacy concerns, and AI's inability to replicate human empathy (Selwyn, 2019; Turkle, 2011). Accordingly, our pilot studies also conducted an intentional search for 'negative' cases.

■ 3. THEORETICAL FRAMEWORK

Our framework draws on three existing theories. What is new is not those theories, but the contextually re-purposing of them for AI mediated sexuality education in a stigmatized rural context. The three pillars interact, but are not linear causal stages.

■ 3.1. Pillar 1: Psychological Safety

Psychological safety is “the shared belief that the team is safe for interpersonal risk taking”. In classroom, schoolyard, or workplace, to ask about menstruation is to risk humiliation. Conversation AIs represent no social network to humiliate. But psychological safety particularly that of the AI does not lead to self disclosure to the AI, nor does any guarantee of privacy. It is merely the environmental condition.

■ 3.2. Pillar 2: Online Disinhibition

Anonymity, invisibility, asynchronicity — these lower psychological guards. A question will come into a girl's mind she is ashamed to ask anyone she knows. If she knows nobody is going to know she asked what she tested, she will ask the embarrassing question. Thus: Psychological Safety lowers the perceived risk; Online Disinhibition triggers the behaviour.

■ 3.3. Pillar 3: Affective Engagement

Negative emotions (shame, anxiety) narrow cognitive resources, and to enter a space of emotional openness to information the learner must first regulate those emotions. The AI's non judgmental, normalising answers function to help the learner transmute an experience of shame into curiosity. Affective engagement is not an “outcome” of the transaction but rather a process in which emotion regulation creates an (ideologically) preparatory ground for subsequent cognitive work.

■ 3.4. Conceptual Diagram

The 'layers' can be seen as three interleaved circles. The outside of the circle is the condition of the environment:

Psychological Safety: low interpersonal risk. The middle ring is the behavioural mechanism of Online Disinhibition: Anonymity + invisibility + asynchronicity. The middle 'core' is the affective process of Emotion regulation → readiness to encounter information. Arrows show feedback loops – a successful disclosure may lead you to feel safer still, for example. Moderators trust in technology, dialect alignment, digital literacy influence all three rings. In practice, these 'layers' interleaved and fed back into, as opposed to emerging in, a 'layered' sequence.

■ 4. METHODOLOGY

■ 4.1. Research Design

Qualitative exploratory pilot study (Braun & Clarke, 2021). Goal: generate initial insights, not test causal claims.

■ 4.2. Sampling Strategy

Purposive sampling with principal nomination. Participants were 61 students from two junior high schools in Rong County, Zigong City, Sichuan Province. Principals nominated “typical” students. Researchers explained the study and girls volunteered on a voluntary basis. No incentives were given. Because principals assisted with identifying “typical” students, the sample may not be representative of girls with more severe experiences of the stigma, social withdrawal, or an illegitimate questioning of the credibility of authority figures. To reap maximum participation, and to lower the risk of perceived institutional pressure, no teachers or school administrators were present at any of the interviews, where they were explicitly told at the beginning of each session that their answers would not be shared with the school, that there were no right or wrong answers and that any question they did not want to answer could be skipped, or they could opt out at any time.

■ 4.3. Sample

N=18 (aged 12–15). Recruitment stopped when thematic saturation was reached (three consecutive interviews produced no new codes). Ten (55.6%) were left-behind children.

■ 4.4. The AI System

Participants interacted with a fine-tuned conversational AI (LLaMA-3-8B-Instruct). A locally deployable open-source model was chosen to ensure offline accessibility and data privacy in rural schools.

4.4.1. Fine-tuning for Reproducibility

Model was tuned using lightweight supervised fine tuning (LoRA based instruction tuning; rank = 16, alpha = 32) on ~1200 domain specific question answer pairs. Training data were derived from: (a) WHO's Menstrual health and hygiene management factsheet and Chinese CDC's Adolescent Health Education Guidelines; (b) de-identified FAQs from two rural school health records (n=215); and (c) culturally adapted scripts written by the first author based on pilot conversations with five local girls (not in the final sample). All scripts were vetted by a practicing gynaecologist for medical accuracy. Models were finetuned for 5 epochs (batch size = 4, learning rate = 2e-5) on a single NVIDIA A100.

4.4.2. Pre-deployment Safety Check

Before participants engaged with each AI assistant, 50 queries (about typical teen queries like "is period blood dirty?", "why does it hurt?" "can I swim?") were manually evaluated by the gynaecologist and two researchers, for a) factual accuracy, b) emotional appropriateness, and c) harmfulness. The 50 randomly sampled responses did not contain any clinically dangerous answers (*i.e.*, directives not to seek medical care for severe symptoms), although subtle gender and cultural biases could not necessarily be ruled out given the small number of manual reviews.

4.4.3. Prompts and Decoding

System prompt was "You are a warm, educational, and non judgmental assistant helping adolescent girls understand menstruation. Never shame, never joke, and never provide medical diagnoses." Decoding parameters: temperature = 0.7, "top p" = 0.9. For clinically urgent queries (*e.g.* "I am bleeding too much") it replied with a fixed refusal, "I am not a doctor. Please talk to a trusted

adult or see a healthcare provider"). It was run locally; no login; logs anonymised. One of several example dialogues is in Appendix A.

4.5. Data Collection

Two sessions were conducted: (1) a preinteraction semistructured interview (30–40 min) on experiences, shame, and help seeking; (2) a 15to20min AI interaction, followed by a postinteraction interview (20–30 min) on perceptions, trust, and emotions. All interviews were conducted by a female researcher, video recorded in a private room, audio recorded, and transcribed verbatim.

4.6. Data Analysis

We used reflexive thematic analysis (Braun & Clarke, 2021). There were two researchers who coded the data separately, then collaborated to compare and discuss their interpretations. Coding discussions were used to deepen interpretation, not to 'confirm' objectivity of any of the codes. We purposely searched for disconfirming evidence (negative cases). Themes, representative quotes, and interpretations are summarized in Table 1.

4.7. Reflexivity and Positionality

The first author is a female implementation scientist who grew up in a rural village in Sichuan. The shared dialect and other community norms helped build rapport, with the researcher dressing down daily and avoiding academic jargon, starting each meeting with, "I am here to learn from you." A reflexive journal was kept, and each weekly scheduling meeting was an opportunity for the second author (a male professor with no rural background) to help identify blind spots.

Some interviews were especially difficult to conduct. In two cases, the informants responded in just one word

Table 1: Summary of Themes and Representative Quotes

Theme	Representative Quote	Theoretical Interpretation
1. Menstruation as silence and embarrassment	"I wanted to ask why it hurts, but I couldn't. I just suffered silently." (P12, 13)	Lack of psychological safety (Edmondson, 1999)
2. Fear of judgment in school and family	"The teacher blushed and said 'that's private.' Everyone laughed. We learned: don't ask." (P09, 15)	Interpersonal risk in traditional settings
3. Mixed responses to AI: enthusiasm vs. distrust	"It didn't laugh. It just answered. That felt... safe." (P05, 14) / "It didn't understand our local way of speaking." (P08, 13)	Online disinhibition (Suler, 2004) + moderators (trust, dialect)
4. Anonymity helps, but not universally	"The AI can't tell anyone. So I asked everything." (P17, 14) / "It felt strange talking to a machine. I prefer my cousin." (P01, 12)	Disinhibition works for most, not all
5. AI as emotional companionship—a fragile bridge	"A big sister who never gets tired." (P10, 14) / "Now I know what to ask. Before I didn't even know the right words." (P06, 13)	Affective engagement process (Pekrun, 2014); potential bridge to human support

Note: Prefix "P" denotes participant ID; numbers in parentheses indicate transcript and line numbers.

and would not look at the interviewer's eyes when the topic of menstruation arose. The interviewer hence took additional time to get to know the women outside formal interviews before beginning formal data collection. In another case, a woman kept switching between terms in Mandarin and local dialect that do not have easy English translations; rather than impose an English translation, we tried to keep feeling during transcription and translation. These moments revealed to the research team that silence, pauses, and vocabulary were meaningful data in their own right.

■ 4.8. Ethics

Approval by university's institutional review board, with written informed consent obtained from parents/guardians and assent from each girl. Data were anonymized. Withdrawn at any time. AI had statements that they were not a medical professional.

■ 4.9. Positioning

This is an exploratory pilot. No claims of generalizability are made. The interpretive lens is hypothesis-generating.

■ 5. FINDINGS

■ 5.1. Theme 1: Menstrual Silence and Shame

Participant 12 (13) paused several seconds before explaining she never asked anyone about menstrual pain: *"I wanted to ask why it hurts, but I couldn't. I just suffered silently."* Teachers looked away; girls changed pads "like a thief".

■ 5.2. Theme 2: Fear of Judgment

Participant 09 (15) recalled: "A girl asked the teacher about cramps. The teacher blushed and said 'that's private.' Everyone laughed. We learned: don't ask." A peer was called "period girl" for weeks and refused to come to school.

■ 5.3. Theme 3: Mixed AI Responses

Of the users, 14 of 18 found it helpful. Participant 05 (14): "It was quiet, and no pressure. Different from school" But four had negative reactions. Participant 13 (14): "The answers were correct but felt like a robot. No warm" Participant 08 (13): "It didn't understand our way of speaking and too formal" Participant 03 (12): "I wasn't sure if I can trust it. How do I know it's not lying?"

A closer look at these negative cases revealed three distinct sources of distrust: First, a perceived emotional

flatness ("robot" comments, n=2), second, a linguistic mismatch (standard Mandarin vs local dialect, n=1), and third, generalized scepticism of technology ("How do I know it's not lying?", n=1). Notably, the two users describing emotional flatness had more prior contact social chatbots (e.g. Xiaolce) than other users, suggesting that familiarity with more anthropomorphic conversational agents may raise the expectations that our task oriented, medically focused assistant was unable to meet. This phenomenon suggests that user experience history serves as a moderator of the "Digital Safe Haven" condition not discussed in prior AI education literature.

■ 5.4. Theme 4: Anonymity's Limits

Participant 17 (14): "The AI can't tell anyone. So I asked everything." But Participant 01 (12) paused, looked down, and said quietly: "It felt strange talking to a machine. I prefer my cousin."

■ 5.5. Theme 5: AI as Fragile Companion

Some girls anthropomorphised the AI. Participant 10 (14) smiled at: "A big sister who never gets tired." After, some suggested they might now, ask their mother follow up questions. Participant 06 (13): "Now I know what to ask. Before I didn't even know the right words." We present this as a possible bridge, knowing it is fragile.

■ 5.6 Integrated Cross-Theme Synthesis

Looking across the five, a pattern emerges: the same safe AI characteristics that enabled psychological safety and disinhibition for most participants also provoked emotional distance and distrust for a minority. This pattern suggests that the "Digital Safe Haven" is not mono-experiential, but rather shaped through the intersection of at least three conditions: the young women's previous experiences with conversational agents (Theme 3), linguistic cultural alignment (Theme 3), and family structure (three of the four distrusting girls were left behind children living with grandparents). Moreover, in light of Theme 5, AI induced emotional comfort was not hemmed in, but rather, for several participants a bridge to eventual human interaction (eg. asking mothers follow up questions). This longitudinal intimacy-risk pairs with emotional substitution (Theme 4), where a girl may "like" AI better than a cousin or parent. The interplay among Themes 3, 4, and 5 suggests the framework's pillars are not additive, but rather interactive, and at times contradictory - disinhibition both enabling disclosure and undermining relational authenticity,

perceived safety both encouraging and replacing human support. These productively puzzling tensions are not limitations of the framework but rather its most fruitful findings for future research.

6. DISCUSSION

6.1. Theoretical Extension vs. Existing Theory

This study does not attempt to put forward a new grand theory of AI mediated learning, but its contribution is theoretical in nature, showing how familiar concepts like Psychological Safety, Online Disinhibition and Affective Engagement intersect in different ways within the stigmatized, gendered and resource constrained contexts of learning. By contextualizing these familiar concepts in the realities of rural Chinese adolescent girls lives, this study broadens the current AI in education scholarship beyond its typical concern with performance, efficiency and cognition towards socially and affectively oriented modes of learning.

Specifically, the framework provides two conceptual refinements - it shows that psychological safety in AI mediated environments may not derive from anonymity alone, but from a feeling of users' social evaluation being put on hold. It also shows how online disinhibition can both enable and compromise relational authenticity - a tension that existing disinhibition theory has yet to wholly appreciate in stigma health learning settings.

6.2. An Interpretive Lens, Not Causal

The pillars interact with each other: Psychological Safety are the conditions; Online Disinhibition is the activating mechanism; Affective Engagement is the process that the regulatory emotions mediate. I would not leave university half way through; I'd probably stalk the professor. None of my conclusions are linear stages. This is a framework offered as means for generating

hypothesis; it is not validated. We did not measure knowing, retaining, or changing behaviour. So in many means I feel uncomfortable asserting people's "readiness to engage with information" or "affective engagement." I have captured the emotional and communicative processes (which may also be cognitive) preceding learning, not the learning part.

6.3. Tensions: AI as Safe Yet Uncertain

While anonymity lessened shame for most, it created a sense of "uncanny" distance for some (Participant 01: "It felt strange talking to a machine"). This finding implies a conflict between disinhibition and relational authenticity; the very thing that created space for disclosure (anonymity) was partly detrimental to the warmth and cadence of social connections that some users craved. Girls who anthropomorphized the AI as "a big sister who never gets tired" felt unable to trust at the same time ("How do I know it's not lying?"). The "Digital Safe Haven" is thus a contested, negotiated, context dependent space.

One explanation for these findings could be that the features that made the AI perceptually "safe" from a psychological perspective for some participants—its being anonymous, emotionally neutral, and without social consequences—also diminished its perceived sense of relational authenticity. While many participants rose to comfort with the AI precisely because it lacked judgment, others perceived this same absence of humanness to be emotionally cold and untrustworthy. This tension complicates further optimistic narratives in contemporary discourse on AI in education that posit reduced social pressure allows for greater engagement with information. Rather than being straightforward digit reproductions of interpersonal support, conversational AI appears to hold some liminal relational status between informational tool, emotional companion and socially unknowable machine. This ambiguity may have bearing in constrained

Table 2: Explicit comparison with existing theories.

Existing theoretical claim	What this study found	Refinement / extension
Suler (2004): Online disinhibition is primarily beneficial for self-disclosure.	Disinhibition simultaneously enabled disclosure (Theme 4) and created feelings of "uncanny" distance (Theme 4, Participant 01).	In stigmatized health contexts, disinhibition produces a tension between reduced social fear and reduced relational authenticity.
Edmondson (1999): Psychological safety is a shared belief that the team is safe for interpersonal risk-taking.	Psychological safety in AI interaction derived not only from anonymity but from the perceived suspension of social evaluation (Theme 3).	The mechanism of psychological safety in human-AI interaction includes an additional layer: the user's trust that the AI has no memory or social network.
Pekrun (2014): Negative academic emotions narrow cognitive resources.	Shame reduction was not sufficient for cognitive engagement; participants also needed emotion regulation that felt authentic (Theme 3, distrust of "robotic" answers).	Affective engagement requires not just the absence of negative emotion but the presence of perceived emotional warmth—a finding that complicates purely instrumental designs of health chatbots.

educational environments where emotion and information are intertwined and inseparable elements of content delivery. One hypothesis might be that rather than simply removing barriers to sexuality education, conversational AI shifts how trust, vulnerability, and disclosure get negotiated in digital terrain.

■ 6.4. Negative Cases and Moderators

Distrust, perceived “robotic” responses, and dialect mismatch moderate the effect. A “Digital Safe Haven” is not one size fits all. These findings suggest that the “Digital Safe Haven” lens may depend on users’ baseline trust in technology, linguistic cultural alignment, prior experience with conversational agents, and willingness to anthropomorphize. Under conditions where these factors are absent, AI may fail to generate psychological safety.

■ 6.5. Critical and Ethical Reflections

- Emotional dependency (Turkle, 2011): The comfort provided by AI may paradoxically reduce willingness to engage in real world conversations.
- Digital divide: Device sharing, internet access, and literacy are real barriers.
- Gender bias: Commercial AI may reproduce stereotypes; ongoing auditing needed.
- AI cannot replace teachers (Selwyn, 2019): AI is a supplementary bridge, not a replacement.
- Algorithmic opacity and misinformation risks (Tlili *et al.*, 2023): As Tlili *et al.* (2023) observed, the same conversational AI that provides emotional comfort can also produce inaccurate or harmful responses if not carefully constrained. In our study, we manually verified responses before deployment, but off the shelf chatbots lack such safeguards.
- Ethical risks for adolescent users (UNICEF, 2021): Because adolescent girls may anthropomorphize conversational systems and overestimate their authority, there is a risk of emotional substitution – where a child turns to AI instead of a trusted adult for sensitive concerns. Additionally, if the AI provides an incorrect or biased response, a young user may internalize it as factual. Therefore, future deployments should incorporate clear transparency cues (e.g., “I am an AI, not a doctor”), age appropriate disclaimers, and explicit pathways to adult human support. This study’s AI included a medical disclaimer, but longer term interaction effects remain unexplored.

■ 6.6. Limitations

- a) Small, purposive sample with principal nomination bias – may underrepresent severely stigmatized girls.
- b) Single interaction, no longitudinal follow-up.
- c) Specific AI implementation may not represent off-the-shelf chatbots.
- d) Reflexive thematic analysis cannot claim coding objectivity; our interpretations are situated.
- e) No direct measurement of cognitive learning outcomes.
- f) Because 55.6% of the sample were left-behind children, the findings may be more applicable to girls living apart from one or both parents than to those in two-parent households.
- g) Although not a primary focus of this study, we observed that three of the four participants who expressed distrust of the AI were left-behind children. This raises the possibility that family structure moderates AI acceptance, but the sample size does not permit statistical testing.

■ 6.7. Future Research Directions

Based on the above limitations, we suggest four specific paths forward:

1. Longitudinal design - follow whether this reduction in shame persists beyond one interaction, and whether there is evidence of this translating to the real world and helping behavior as well.
2. Comparative effectiveness - randomized trials where students are randomly assigned to AI only, AI + teacher facilitation and peer education conditions would help isolate the unique contribution of AI.
3. Moderator focused sampling - actively seeking out more girls with low digital literacy or high distrust of technology would help clarify the boundary conditions of the “Digital Safe Haven” view.
4. Linguistic adaptation - “fine tuning” the AI model on local dialects (such as Sichuanese) may help combat some of the “robotic” and “too formal” critiques raised by a number of our participants.

■ 7. CONCLUSION

Our data suggest, tentatively, that conversational AI has the potential to alleviate menstrual stigma for some rural

adolescent girls, serving as a “Digital Safe Haven”—a psychologically safe, anonymous, non stigmatizing space for both affective engagement and trust with sensitive health information. The three pillar interpretive lens is presented as a starting, context specific framework. The contribution lies in extending preexisting concepts to a new, underexplored context, rather than proposing new theory. Negative cases serve as a reminder that AI doesn’t work for everyone. In rural contexts where sexuality education is often missing, conversational AI may be a potential first feeble step—a complement to, rather than a substitute for, human teachers and real world relationships.

■ APPENDIX A: EXAMPLE AI DIALOGUE (RECONSTRUCTED)

User (P12, 13): Is period blood dirty? My grandmother says it ruins food.

AI: That’s a good question. Period blood is normal body fluid, just like blood from a cut. It is not dirty. The belief that it can ruin food is a cultural idea, not a medical fact. Many girls hear similar things, but your body is normal and healthy.

User: So it’s not bad?

AI: Exactly. There is nothing “bad” about menstruation. It’s a sign your body is working as it should. Would you like to know more about why periods happen?

User: Yes. And why I feel sad before my period?

AI: Many girls feel emotional changes before their period – sometimes sad, sometimes irritable. That’s called premenstrual syndrome (PMS) and is caused by natural hormone shifts. It doesn’t mean something is wrong. Would you like me to explain more?

User: Yes, thank you. I thought I was alone.

Note: The dialogue excerpt was reconstructed from anonymised interaction logs and translated from Mandarin for illustrative purposes; minor smoothing was performed for readability. The AI did not use local dialect; this was a criticism raised by Participant 08.

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