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PERFORMING EMPATHETIC USER RESEARCH TO VALIDATE A NEED AND GENERATE INSIGHTS

"Everyone has reasons for their choices that may be linked to some degree of physical, emotional, or mental pain. You have to recognize that when you're interviewing people and asking them to share intimate details of their life. They're inviting you into their world and that's an incredible privilege that you must hold without judgement."
– Janene Fuerch, Co-Founder, Emme

Background

When Janene Fuerch became a Stanford Biodesign Innovation Fellow in 2016-17, she was eager to learn more about the world of health technology innovation. A neonatologist by training, Fuerch was particularly enthusiastic to explore how technology innovation could be used to improve health and healthcare in the maternal and pediatric fields. But after the 2016 election, her interests began to broaden. The Accountable Care Act (ACA), passed in 2010, had made widespread access to low or no-cost contraception a reality. However, the new presidential administration had campaigned on overturning the ACA and, upon taking office, quickly initiated new rules that would exempt employers from providing insurance coverage for contraception if they objected on moral or religious grounds.[1] Given the political climate, Janene recalled, "I was very concerned as a physician and a woman that we would start to see the erosion of reproductive rights in this country."

Joining forces with another Innovation Fellow, Amanda French, Fuerch began to investigate the contraception space. While intra-uterine devices (IUDs) had proven to be highly effective at preventing pregnancy, they were expensive for those without – or who might lose – insurance coverage (approximately $1,000).[2] Hormonal oral contraceptive pills (OCPs), on the other hand, were far more affordable. First approved by the FDA in 1960, OCPs could be purchased on a prescription basis by those without insurance for $20-50 per month, making it a more practical solution for many women.[3] Anticipating that OCPs would likely remain a viable contraception option amidst impending political shifts, the team decided to focus on this area as a potential innovation project.

Their immediate research revealed that OCPs were 99% effective if taken correctly. However, users frequently forgot and missed pills, which reduced their efficacy to 91-93%. That meant that at 7-9 out of 100 women on the pill became pregnant each year.[4],[5] With nearly 10 million women on OCPs in the US in 2016,[6] the result was approximately 700,000-900,000 unplanned pregnancies per year. Correct OCP use relied on women not only to take the pill daily, but to do so at the same time every day. This was challenging for various reasons, including women being stressed, forgetful, and busy, among other behavioral factors. Additionally, protocols for catching-up on missed pills could be confusing, which could exacerbate rather than improve compliance. Fuerch and French believed that they had hit on a compelling unmet need – a way to improve adherence for OCPs users to reduce the number of missed pills per cycle.

Validating the Need through User Research

Recognizing that their first need statement was a hypothesis based on a preliminary understanding from secondary research, the team set out to validate their focus through primary research. Specifically, they created a comprehensive plan that included 1:1 interviews, focus groups, and surveys. The goals of these

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outreach efforts would be to strengthen their understanding of the real unmet need and to uncover insights that would position them to design an effective solution.

Approach

In defining an approach to user research, Fuerch felt strongly that they needed to proceed in a thoughtful, intentional manner. Too often, when healthcare solutions do not work as intended due to user error, researchers consciously or subconsciously may assign blame to the users/patients. Fuerch herself had felt judged for missing pills as a busy resident working 24+ hour shifts in the hospital that caused her to lose track of time. Her lived experience created a sense of empathy in the team and motivated them to adopt a philosophy of curiosity rather than blame.

They also recognized that topics such as sexual activity, contraception use, and reproductive choice were sensitive areas that sometimes could be stigmatized or considered taboo. This further motivated the team to make sure their approach and questions were free of biases that could make others feel uncomfortable or judged. For instance, rather than starting a conversation with a question like, "Do you use birth control?," the team decided to take a step back and ask more general questions initially. They would start by getting to know a bit about each person and then focus the conversation accordingly. When it felt appropriate, the team would inquire whether the interviewee wanted children and, if so, when and what role contraception played in that journey. In other cases, if they heard that someone did not use birth control, they realized it was important to respect that choice and ensure that their own biases did not make the individual feel judged. Over time, the team learned that choosing language carefully and conducting interviews/focus groups in pairs were effective ways to help keep biases in check. As Fuerch described, “We realized our need wouldn’t resonate and our solution wasn’t going to be a personal fit for everyone.”

Additionally, while the team wanted to be sure to validate the need with different age groups, they debated whether to include teenagers in their research. Fuerch and French believed the unmet need was relevant to teens, too. However, involving anyone under 18 in user research would require parental consent. Ultimately, they decided that the extra effort would be worth it since unplanned pregnancies in this age group can have substantial consequences, particularly on education and career choices made at this time of life. Yet, in an effort to ensure they were completely prepared to ethically involve teens in their work, Fuerch and French decided to defer the active recruiting of teens into the clinical trial until they had vetted specific prototypes for women to interact with and respond to.

Importantly, Fuerch and French recognized that doing user research regarding people's contraceptive needs meant that that they would be collecting highly personal information. Accordingly, they needed strong processes for ensuring individual privacy, as well as the safe, secure storage of all data. This philosophy also would extend to whatever product they eventually developed. They committed that any solution they would create must be HIPAA compliant. They further wrote it into the company bylaws that they would never sell user data. As Fuerch explained, “If someone trusts you with their private health information, you shouldn't be able to monetize that. You shouldn't be able to misuse it, even in an anonymized way. It’s especially essential to protect the data of vulnerable populations. We had to make sure we had clear policies around this from the very beginning.”

Activities

The team started small, initially asking their circle of family and friends to participate in interviews and then broadening their efforts to include 1:1 conversations with advisors, colleagues, and investors. Eventually, after becoming confident that their empathetic approach was working, they expanded their efforts to include focus groups and extensive nationwide surveys to intentionally reach people from

different age and racial groups, geographic areas, socioeconomic status, and political affiliations in their user research. Through the survey company they worked with, they were able to set limits to help ensure that no particular group was over-represented in their results.

They also posted select survey questions on various online forums to help assess the level of need. This is how they were able to ethically gather some input from teens during need validation since teenagers were able to voluntarily – and completely anonymously – responded to questions posed to women of all ages on these public forums.

Through these activities, Fuerch and French ultimately connected with more than 1,000 individuals. They also confirmed that, despite birth control being a sensitive topic, people were willing to share if the right circumstances were present – specifically, curiosity, empathy, respect, and privacy were critical success factors to the approach. With a safe environment in place, recalled Fuerch, “People shared quite openly about own personal struggles. We never forced anyone to share what they didn't want to.” Once the team felt like they had spoken to a diverse cross-section of women representing as many different perspectives as possible, they felt as though they understood important trends, key needs, and important difference in their target population and were ready to move into concept generation and prototyping.

Important Insights

By taking an empathic and curious approach to understanding why women were not taking their OCPs consistently, the team discovered that women were highly motivated to take their pill, but the habit was difficult to maintain with the consistency required to realize the pill’s optimal effectiveness. Even more importantly, women wanted help to do better. Fuerch and French were further convinced their need was real.

One insight they hadn’t fully appreciated before conducting user research was that timing in taking OCPs mattered not just because of pill efficacy, but because of hormonal fluctuations that happen when the pill is taken inconsistently. Hormonal fluctuations can affect mood, energy, and appetite, so regularity is key. This take-away resonated with Fuerch personally since loved ones had noted changes in her outlook and behavior when she missed taking the pill. While not well understood at the time, this important take-away is now recognized as an essential aspect of wellbeing for women on OCPs.

Developing personas of the different types of users they spoke with helped the team make their user research actionable. Rather than thinking about users as one homogenous group, the personas clarified important differences between prospective users, as well as similarities and synergies. For example, the team’s personas included a teenager with politically conservative parents from Alabama and a 48-year-old mother approaching menopause. While seemingly quite different, their research illuminated how they could serve these different personas where their needs overlapped – discrete, convenient assistance taking their OCPs to maximize their overall effectiveness.

Through their research, the team also heard from women that existing solutions were largely ineffective. In particular, alarms and reminder apps were too easily turned off or ignored, and then forgotten. This insight caused them to focus on a combination hardware/software solution, considering multiple variations before landing on the embodiment that became the Emme product. For example, given the prevalence of smart phone use across the target user population, Fuerch and French briefly considered incorporating a pill tracking mechanism into a smart phone cover so it would always be with the user. However, their user research refuted this idea since young people changed phone covers frequently.

Importantly, Fuerch felt strongly about considering who a hardware/software solution would work for, and who it might not. Too often, innovators focus solely on who they are designing for and do not understand who their product may leave behind. Referencing back to the personas, Fuerch and French recognized that a purchase of hardware could be too expensive for some categories of women they had interviewed, and that concerned them. They didn't want only to innovate for those with a strong willingness and ability to pay. For this reason, the team designed the software component of their solution to be free of charge so that those who could not afford the hardware still had access to the app. To differentiate their app from other trackers that had limited effectiveness, they spent considerable time and energy investigating ways to make their offering "stickier" and, therefore more efficacious. While the team recognized that the software-only product was not optimal, it at least would ensure that their solution did not substantially exacerbate issues of health equity and access.

The Emme Solution

After substantial development and testing, the Emme solution became commercially available in 2020. The product is a Bluetooth-enabled case that houses the OCPs and links to an app on the user's cellphone. The hardware and software work together to track OCP use and remind women to take their pills every day at the same time to maximize pill efficacy and hormonal control. Based on strong user uptake following Emme's launch, the company was acquired in 2022. The product is available online and continues to provide women with an effective tool for managing their reproductive health.

Key Take-Aways

- Understanding lived experience is integral to user research. Desktop research on its own is insufficient.
- Ask for user input throughout the design journey, not only when you have prototypes to share. User insights are essential to getting the up-front need right.
- Intentionally seek to learn from dissimilar people. Groups that are hard to reach often reveal important insights.
- Create personas of different user types and seek to understand what they do and do not have in common. Use this information to be intentional about who you will design for who may be left behind. Be proactive in seeking not to widen health inequities.
- When conducting interviews about sensitive topics, start with broad questions and develop rapport before going narrow. Always respect people's boundaries. Adopt proactive strategies to neutralize bias and defer judgment.
- Think carefully about how you will use sensitive user data and how you will protect it.

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[1] Anna North, "The Trump Administration's War on Birth Control," *Vox*, September 24, 2020, https://www.vox.com/21421292/trump-free-birth-control-iud-health-care (July 2, 2024).

[2] Ibid.

[3] Ibid.

[4] "How Effective is the Birt Control Pill?" Planned Parenthood, https://www.plannedparenthood.org/learn/birth-control/birth-control-pill/how-effective-is-the-birth-control-pill#:~:text=If%20you%20use%20it%20perfectly,pill%20is%20about%2093%25%20effective (July 2, 2024). "

[5] "Birth Control Pills," Cleveland Clinic, https://my.clevelandclinic.org/health/treatments/3977-birth-control-the-pill (August 23, 2024).

[6] "Current Contraceptive Status Among Women Aged 15–49: United States, 2015–2017," Centers for Disease Control and Prevention, https://www.cdc.gov/nchs/products/databriefs/db327.htm (July 11, 2024).