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Author

DaQuino, Katie

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**Fulfilling California's Promise to be a Reproductive Safe Haven:
The need for pharmacogenomic research to reduce adverse birth control symptoms**

Katie DaQuino

2023 Cal in Sacramento Fellow and Jo Freeman Women in Politics Fellow¹

¹ Based at UC Berkeley's Institute of Governmental Studies, the Cal-in-Sacramento Fellowship Program sends approximately 30 Cal students to the state's capital every summer for eight-week public service internships. The Jo Freeman Women in Politics Fellowship supports Cal-in-Sac Fellows whose individual research projects focus on women in politics, including research on public policies that affect women.

Problem statement

The past couple of years, there has been one question that has been stuck in my mind. At first this question felt personal, medical, and far from political. Then I started to voice my concerns to the people around me and realized so many of us were asking the same questions. This research project was born out of conversations, full of frustrations and anxieties, about contraceptives.

Contraceptives are complicated and have countless side effects that are often overlooked. Additionally, they can be difficult to access and hard to learn about. Finding the right birth control is a complicated journey that many young people embark on with limited guidance. In this project, I sought to learn more about people's experiences with birth control, and through these stories explore what issues California needs to address.

Research Question

What are the major issues people face when taking or accessing contraceptives? What policy solution can California implement to improve these experiences?

Literature Review

The invention of contraceptives has transformed the landscape of reproductive freedom and bodily autonomy. It has also been an important medicine used to regulate menstrual cycles, reduce pain, and prevent cancer. Access to medicine that allows people to take control of reproduction, hormones, and menstrual cycles has transformed the ability of all who take it to navigate the world. Among many freedoms, it has allowed women to remain in the workforce and to choose if and when they wanted children. By 1982, 60 percent of reproductive age women were in the workforce, largely due to access to the Pill.²

Birth control became widely available in the 1960s. By 1962, 1.2 million American women were taking the Pill.³ In the six decades since then, there has been an upward progression in legality, availability, and types of birth control. People can now choose between pills with progestin and estrogen, pills with only progestin, arm implants that they replace every five years, a variety of hormonal and copper IUDs, a shot every 3 months, a monthly vaginal ring, a patch, and more.

From the beginning, there was opposition to birth control, especially from the Catholic Church. However, the Supreme Court ruled in favor of access to contraception, guaranteeing the right for all women. In *Griswold v. Connecticut* (1965) the U.S. Supreme Court argued that denying a married couple birth control is a violation of the right to privacy. In 1972, the court

² A Timeline of Contraception | American Experience | PBS. (n.d.). [Www.pbs.org. https://www.pbs.org/wgbh/americanexperience/features/pill-timeline/](https://www.pbs.org/wgbh/americanexperience/features/pill-timeline/)

³ A Timeline of Contraception

expanded this right in *Eisenstadt v. Baird*, ruling that doctors could not deny single women access to birth control.

When, last summer, the Dobbs decision shattered access to abortion around the country, it also called into question this right to birth control. The decision in *Roe v. Wade* was founded on the same substantive right to privacy as *Griswold* and *Eisenstadt*. In his concurring opinion for Dobbs, Justice Thomas called out these cases specifically, arguing that all such substantive rights do not exist. Not only did Dobbs nearly eliminate the right to an abortion in many parts of the country, making access to preventative birth control immediately more essential, but it called into question the right to birth control at all.

Fortunately, while I have been conducting this research, we have also seen an increase in contraceptive access. This month (July 2023) the FDA approved Opill, a progestin only pill, to be available over the counter. Since the pill does not contain estrogen, it does not come with some of the side effects related to blood pressure, making it safe to take without a prescription⁴. Over 100 countries already allow over the counter access.⁵ While it is not yet clear how much the over the counter pill will cost, this is undoubtedly the end to a huge barrier in access.

Birth control is arguably the most life changing invention of the previous century. However, like any invention, it remains far from perfect today. 31 percent of people taking contraception say they have negative side effects; 52 percent of them say the symptoms are more severe than they expected.⁶ In one survey, 70 percent of young women said they had considered stopping or had stopped taking the Pill due to side effects.⁷ Often, women are prescribed birth control quickly with little informed consent about side effects or discussion of other options.⁸

Research methods

In this project, I set out to discover what policy solutions California could implement to improve people's experiences with birth control. To do so, I designed a semi structured qualitative interview. The interviewees were asked a series of questions about their experiences with contraceptives and what they want to see change in regards to these experiences.

I conducted six interviews of college students and recent graduates in their early twenties who had used or were using contraceptives. Out of the 32 female and non binary students who were contacted, six agreed to be interviewed. In the next section I summarize the findings from my interviews.

⁴ Birth Control Options for High Blood Pressure. (2023, March 15). Healthline.

<https://www.healthline.com/health/birth-control/birth-control-high-blood-pressure#:~:text=Progestin%2Donly%2Dbirth%20control%20pills%20are%20also%20known%20as%20>

⁵ Over-the-Counter Oral Contraceptives. (n.d.). www.aafp.org. <https://www.aafp.org/about/policies/all/otc-oral-contraceptives.html>

⁶ Frederiksen, B., Ranji, U., Long, M., Diep, K., & 2022. (2022, November 3). Contraception in the United States: A Closer Look at Experiences, Preferences, and Coverage. KFF. <https://www.kff.org/womens-health-policy/report/contraception-in-the-united-states-a-closer-look-at-experiences-preferences-and-coverage/>

⁷ More Women Are Seeking Side-Effect Free Forms of Family Planning. (n.d.). Institute for Family Studies. <https://ifstudies.org/blog/more-women-are-seeking-side-effect-free-forms-of-family-planning>

⁸ More Women Are Seeking Side-Effect Free Forms of Family Planning.

Findings

Types of birth Control

Five out of six of the participants had taken a variation of the Pill. For multiple participants, this was because the Pill was the only kind that they initially knew about. One participant said that they liked that the Pill was non-invasive. To them it seemed like it would be easier to explain to their parents than an implant.

Some participants took the Pill to help with medical conditions. One respondent's doctor told her to take it to prevent uterine cancer. Another took it to help with period pain because she suspects she has endometriosis.

While one participant specified the type of pill they used—the nora B mini pill—most of the participants did not mention the type of pill they took or did not know it without looking at their prescription.

In addition to the Pill, some participants used other kinds of birth control, including the implant and fertility tracking. One participant began with the arm implant out of concerns about remembering to take the Pill everyday. After having bad experiences with the implant, they switched to an IUD. However, the IUD caused intense pain, which was ignored by the doctor. This participant then switched to fertility tracking using an aura ring, referring to this as natural cycles. Only one participant explicitly mentioned using condoms as a form of birth control. Two participants mentioned that they were considering getting an IUD but had not done so yet for various reasons including fear of pain.

Experiences and Symptoms

Two thirds of the participants stated reasons related to their menstrual cycle for taking birth control. For some this meant using the Pill to cause them to have a period. For others, it was making their period lighter or eliminating it entirely. These participants each reported some degree of satisfaction with birth control and were still continuing to take it.

The other third, who did not take it for period related symptoms, reported high dissatisfaction and horrible symptoms related to birth control. Both of the participants in this third had stopped taking hormonal birth control due to their adverse symptoms. Two participants reported negative symptoms in regards to their periods. One said that they originally had fairly manageable periods, but since taking the pill (and even once they stopped taking it) their periods have been very painful. Another said that they commonly had random spotting while they had the implant, which eventually caused them to have it removed.

Five of six participants discussed experiencing symptoms related to mental health while taking birth control. These symptoms included heightened emotions, a lack of emotions, clouded judgment, issues with rationality, mood swings, and depression. Commonly, the interviewees discussed the difficulty in knowing whether these were symptoms of their hormonal birth control. This was further complicated by the fact that most participants began taking birth control

at the start of their first serious relationship. For some, it was hard to distinguish between emotions related to the relationship versus emotions related to the hormones. This makes it more difficult for participants to identify the source of the symptoms, complicating the process of selecting a birth control that does not negatively impact their mental health.

Hormonal birth control led to contradictory symptoms for different interviewees. One reported bad acne as a side effect of birth control. Meanwhile, two reported that a reason for taking birth control was that it decreased their acne. Additionally, two participants reported adverse effects on their weight, one saying that she lost weight and the other saying that she gained weight. People also reported decreased sex drive, especially in the initial months after starting the pill. Two participants explicitly diminished their symptoms, by saying that they do not think they have it as bad as others.

Access and Information

Participants learned about birth control through friends, moms, siblings, Google, YouTube, and talking to Planned Parenthood.

One discussed not learning about forms other than condoms until talking to friends in college. At this point they simply googled Planned Parenthood, but did not do much research outside of that.

Another had used The Pill Club to access birth control. While this was an easy way to access birth control online, it worries her that she has never talked to a doctor about it. She is currently thinking about finding a gynecologist, but is not sure how to do that.

Some chose the type of pill they should take based on what their family members had used. One participant said that both her sisters had taken a specific pill and it helped with their painful periods, so she did the same. Another took it because her mom also used it. In both cases, the participants were looking to decrease painful periods symptoms and were able to turn to family members who had similar periods and had found a solution through birth control.

One participant initially only knew about the pill. The doctor suggested the implant instead. After having bad experiences with the implant, she switched to an IUD. She also had bad experiences with this, but the doctors were continually dismissive of her pain. This led her to do her own research and switch to only monitoring her temperature to predict ovulation.

Another participant went to Planned Parenthood in high school in order to prevent her parents from finding out she was taking birth control. Planned Parenthood was helpful and answered all her questions. She also watched other girls talking about their experiences on YouTube.

Policy Changes

At the end of each interview I asked participants what policy changes they would want to see in regards to their contraceptive experience. Every participant recommended different changes. Two felt that we need to change the expectation that people take hormonal birth control

at all. Their negative experiences led them to look for other solutions and they want other people to know that birth control is not the only option.

Others spoke about having more clear access to information. Participants suggested clear FAQs that would help people make sense of options. Additionally, participants suggested that high schools and colleges provide more information, including information about all the different options for contraceptives and information about privacy and insurance.

Policy recommendation

In order to improve people's experiences with birth control, California must do two things. First, the state must implement a truly comprehensive sex education requirement. Sex ed instructors need to not only list the types of birth controls, but talk in detail about symptoms, access, and options. Students should receive this education beginning in middle school, and also repeatedly throughout high school and college. This is essential. However, as seen in this research, no matter how much we learn about our options, we still do not know how the medicine will affect us. Thus, my primary policy solution is funding research into pharmacogenomics for contraceptives.

California should invest in research to find a way to help people make the most informed choice based on their bodies. Pharmacogenomics is a growing field of study that identifies the way that people will react to medications by looking at their DNA.⁹ Using pharmacogenomics to study the effects of birth control is not a new idea. One 2003 study recommended studying the pharmacogenomics of thrombosis, a serious side effect related to blood coagulation that can result from the Pill.¹⁰ In 2020, a study found a gene that puts some women at a higher risk for weight gain when they receive an implant.¹¹ By 40 years old, the average woman in the US tries three methods of contraception; 30 percent attempt five or more.¹² Through expanding this research, we could learn more about who is at risk of certain symptoms from different kinds of contraceptives. This knowledge would empower people to choose birth control that works for them without having to spend years playing trial and error while putting their physical and mental health at risk.

This type of research is expensive.¹³ It will take substantial investment from the state in order to fully conduct and implement it. However it is essential. For too much of our history,

⁹ Why Prescription Drugs Can Work Differently for Different People. (2021, October 13). UConn Today. <https://today.uconn.edu/2021/10/why-prescription-drugs-can-work-differently-for-different-people-2/>

¹⁰ Martinelli, I., Battaglioli, T., & Mannucci, P. M. (2003). Pharmacogenetic aspects of the use of oral contraceptives and the risk of thrombosis. *Pharmacogenetics*, 13(10), 589–594. <https://doi.org/10.1097/00008571-200310000-00002>

¹¹ Genes may play a role in weight gain from birth control: Some women may be at higher risk of weight gain with a popular contraceptive implant. (n.d.). ScienceDaily. <https://www.sciencedaily.com/releases/2020/05/200512134532.htm>

¹² Christofield, M. (2018, October 24). Could precision medicine help women choose the contraceptive that works best for them? STAT. <https://www.statnews.com/2018/10/24/precision-medicine-contraceptive-choice/>

¹³ Personalised and Precision Medicine for Contraception. (2022, August 17). Dama Health. <https://damahealth.com/the-science/>

birth control has been under researched and women's health has been ignored. Doctors too often brush over women's pain when it comes to their reproductive health. California has promised to be a safe haven for reproductive health. In order to fully live up to this promise, we must invest in research to improve people's experiences with contraceptives.