

Overcoming a Cycle of Shame Through Menstrual Education:  
How Sources of Information Prepare Girls to Detect and Treat Abnormal Menstrual

Bleeding

by

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## ABSTRACT

In the US, menstrual education, which provides key information about menstrual hygiene and health to both young girls and boys, historically lacks biologically accurate information about the menstrual cycle and perpetuates harmful perceptions about female reproductive health. When people are unable to differentiate between normal and abnormal menstrual bleeding, based on a lack of quality menstrual education, common gynecological conditions often remain underreported. This raises a question as to how girls' menstrual education experiences influence the ways in which they perceive normal menstrual bleeding and seek treatment for common abnormalities, such as heavy, painful, or irregular menstrual bleeding. A mixed methods approach allowed evaluation of girls' abilities to recognize abnormal menstrual bleeding. A literature review established relevant historical and social context on the prevalence and quality of menstrual education in the US. Then, five focus groups, each including five to eight college-aged women, totaling thirty-three participants, allowed for macro-level analysis of current challenges and gaps in knowledge related to menstruation. To better examine the relationship between menstrual education and reproductive health outcomes, twelve semi-structured, one-on-one interviews allowed micro-level analysis. Those interviews consisted of women diagnosed with endometriosis and polycystic ovary syndrome, common gynecological conditions that include abnormal menstrual bleeding. Developing a codebook of definitions and exemplars of significant text segments and applying it to the collected data revealed several themes. For example, mothers, friends, teachers, the Internet, and social media are among the most common sources of information about

menstrual hygiene and health. Yet, women reported that those sources of information often echoed stigmatized ideas about menstruation, eliciting feelings of shame and fear. That poor quality of information was instrumental to women's abilities to detect and report abnormal menstrual bleeding. Women desire and need biologically accurate information about reproductive health, including menstruation and ovulation, fertility, and methods of birth control as treatments for abnormal menstrual bleeding. Unfortunately, menstrual education often leaves girls ill-equipped to identify and seek treatment for common gynecological conditions. Those findings may influence current menstrual education, incorporating biological information and actively dismissing common misconceptions about menstruation that influence stigma.

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## CHAPTER 1

### INTRODUCTION

Menstrual hygiene management, which includes access to clean water, sanitation, and hygiene facilities and private facilities to use sanitary products—sanitary pads, tampons, panty liners, menstrual cups, or absorbent period underwear—also requires appropriate menstrual education (House et al., 2012). Menstrual education helps to increase the awareness of girls, as well as boys, about the menstrual cycle and reproductive health, which is necessary for recognizing normal and abnormal menstrual bleeding. However, some communities often deny girls the right to learn accurate information about the menstrual cycle that is not obscured by myths and misconceptions (DeMaria et al., 2019). Because of that, girls may hold an insufficient or incomplete understanding of what is considered to be normal versus abnormal menstrual bleeding. Additionally, menstrual education favors a contradictory meaning of menstruation, teaching that the phenomenon is a normal physiological process, yet it is also dirty and must be conscientiously managed to preserve femininity (Agnew and Sandretto, 2015). This involves a stigma associated with the normal condition. Due to the social impacts of that stigma, historically, girls' knowledge of the menstrual cycle has been lacking. Yet despite increasing access to the Internet and various social media platforms, over the past two decades, girls' knowledge of the menstrual cycle remains quite inadequate.

As of the 21st century, preadolescent girls in the US learn about puberty and the menstrual cycle in a number of different ways, ranging from the trusted medical advice of health care professionals to hushed conversations with their female peers (Orringer and Gahagan, 2010). The most common sources of information include mothers and sisters,

as well as other extended relatives, teachers and school nurses, and social media and advertisements (Hurwitz et al., 2016). According to DeMaria et al. (2019), girls rely on the other female figures in their households or personal lives to learn about puberty and the menstrual cycle, marking them as trusted confidantes (DeMaria et al., 2019). In spite of that, because menstruation is stigmatized, such “at-home” teachings tend to favor social and cultural meanings of the menstruation rather than the biological definition (Bennett and Harden, 2014). In other words, girls may not learn accurate biological information about the menstrual cycle; rather, they may learn to resent menstruation and associate the phenomenon with shame and embarrassment.

According to Hurwitz et al. (2016), mothers are typically their daughters’ first menstrual education teacher, thus making those interactions very significant events for girls in their reproductive health experiences. However, mothers can be uneasy, self-conscious teachers (Hurwitz et al., 2016). One study shows that Mexican, Arab, and European American households were found to share the common belief that menstruation is a taboo topic, thus girls and women are typically expected to not discuss menstruation. And that taboo especially discourages mothers from delving into important details pertaining to the menstrual cycle with their daughters, allowing their daughters to experience menarche uninformed and unaccompanied. But that sets girls up to continue rotating the cycle of shame and negativity pertaining to menstruation (Orringer and Gahagan, 2010). What’s more is that girls with poor initial menstrual education experiences may have an arduous time comprehending future reproductive health information later in life (Rembeck and Gunnarsson, 2004).



Similar to the feelings of shame and embarrassment that interfere with “at-home” conversations about the menstrual cycle, teachers and school nurses may also be uncomfortable with the topic (Agnew and Sandretto, 2015). In 2011, the United Nations Educational, Scientific, and Cultural Organization, or UNESCO, collaborated with the Future of Sex Initiative to set K-12 standards for sexual health education, indicating that girls should possess knowledge of basic reproductive anatomy before age eight and the menstrual cycle before age 12, as the average age of menarche is 12 years old. Attention to the average age of menarche is especially integral to menstrual education, as timeliness and preparedness allow girls to feel more comfortable with menstruation (Hurwitz et al., 2016). Rembeck and Gunnarsson (2004) point out that school governing boards ought to be proactive and implement menstrual education earlier than 12 years old, which is typically around seventh grade, to adequately prepare girls for menstruation and help others who achieve menarche prematurely. Active interventions, or continuous menstrual education, is also integral to girls’ well-being, because periods are quite abnormal at menarche and can change drastically during a girl’s formative years (Rembeck and Gunnarsson, 2004).

Yet Hurwitz et al. (2018) point out that menstrual literacy among preadolescents does not reach the recommended educational benchmark. Sources of information may view discussions about puberty and the menstrual cycle to be inappropriate for children younger than 12 years old and thus avoid those topics. However, two-thirds of preadolescents rely on their schools to provide information about those topics, demonstrating the importance of adjusting attitudes toward menstruation (Hurwitz et al., 2018). Moreover, the substance of menstrual education in schools is typically concerned

with hygiene and concealment, perpetuating the idea of menstruation as a “hygiene crisis” (Agnew and Sandretto, 2015). Then, girls miss gaining knowledge about the physiological process of the menstrual cycle, including the names of important internal reproductive organs, changes in hormone levels, and normal bleeding patterns (Hurwitz et al., 2018).

In this introductory section, I detail negative attitudes about menstruation as well as the impacts of those attitudes on the treatment of heavy, painful, and irregular menstrual bleeding. First, I establish that historically and culturally, menstruation is often associated with ideas the natural process is shameful, embarrassing, and unhygienic as well as something that preadolescent girls ought to fear. Specifically, I discuss how different sources of information, including mothers and other family members, friends, school teachers, and the Internet and social media perpetuate those ideas. Further, I differentiate how those ideas may be similar or different, depending on race, ethnicity, and class, as the US population is largely diverse. Then, I relate menstruation and stigma to people’s understandings of abnormal menstrual bleeding, specifically discussing how poor menstrual literacy may impact the detection and treatment of common gynecological conditions. At that point, I recognize that there is a gap in the published literature and outline a study that closely examines how menstrual education perpetuates negative attitudes about menstruation, leading to women’s inability to recognize abnormalities.

## Menstruation and Stigma

Historically, in the US, fear, shame, and embarrassment have surrounded the concept of menstruation. According to Lara Freidenfelds, in her book *The Modern Period*, it was not until the Progressive Era during the late nineteenth and early twentieth century that public schools began to teach about menstrual hygiene and sexual health. Freidenfelds writes that, because people considered female anatomy and menstruation to be “adult content,” public schools often deemed menstrual education to be inappropriate for preadolescent girls. For example, during the 1920s, approximately eleven percent of high schools in the US taught girls about menstrual hygiene. Although during that time, menstrual education became more popular than ever, sources of information seemed to drop hints that menstruation was taboo. Although, the conversation shifted slightly, when hygiene companies utilized menstrual education as a means to market sanitary products to menstruating women. For instance, during the 1930s, Johnson & Johnson published and distributed two pamphlets, called *What a trained nurse wrote to her younger sister* and *The Periodic Cycle*, alongside their sanitary products. While marketing the company’s products, those pamphlets explained to girls that blood would leave the body during menstruation but failed to explicitly state from where the blood would flow. Similarly, other pamphlets avoided mentions of genitalia or sex, thus menstrual education remained incomplete due to widespread negative attitudes toward female anatomy (Freidenfelds, 2009).

During the mid-twentieth century, another hygiene company, Kimberly-Clark, also published several pamphlets that exemplified similar ideas to Johnson & Johnson’s pamphlets. For example, in 1946, Kimberly-Clark commissioned Walt Disney to animate

and produce a film, called *The Story of Menstruation*, to later release alongside their 1948 pamphlet *Very Personally Yours*, which explained the physiological process and menstruation and provided hygiene recommendations, including their own products (Freidenfelds, 2009). In the pamphlet, a sophisticated and feminine young girl has inherited a “set of new problems,” referring to menstruation and perhaps hinting that young girls ought to dread or be fearful of their periods. Further, mimicking the content of Johnson & Johnson’s pamphlets, *Very Personally Yours* teaches young girls about the pituitary gland, hormones, ovarian follicles, and different female reproductive structures, defining the physiological processes of menstruation and ovulation, but does not mention sex. Those ideas seemingly reinforce negative attitudes about menstruation, referring to the process as a “problem,” promote high expectations for young girls through the depiction of pristine femininity, and remain incomplete, avoiding mentions of sex as it relates to menstruation (Kimberly-Clark, 1948).

Those negative attitudes persisted, even as menstrual education became more accessible in public schools during the twentieth century. For example, in 1976, author Stephen King’s horror novel *Carrie* was adapted into a film and explicitly depicted sixteen-year old Carrie White having her first, very bloody, period in a particularly gruesome and inaccurate manner. Carrie is troubled, her fellow classmates laughing at and chanting, “plug it up,” because of the incident. And such shame persists throughout the film, as Carrie’s mother believes that menstruation is a curse that God created to punish women. Those ideas reflect societal and cultural ideas that menstruation is shameful and embarrassing but also depicts the natural process as extremely horrific, as

Carrie eventually becomes a telekinetic murderer, fueled by her classmates' and mother's taunting (Berlatsky, 2016).

The stigma associated with menstruation and female reproductive health continues to persist during the twenty-first century and is a concept that is present in countless communities that are, otherwise, very socially and culturally diverse. In fact, one study found that myths and misconceptions about menstruation, which influence negative attitudes, presented themselves within Mexican, Arab, and European American communities alike (Orringer and Gahagan, 2010). For many women, menstruation is often taught to be concealed, shameful, embarrassing, and unhygienic. The physiological process has been overcome by myths and misconceptions, including the idea that menstrual bleeding is contradictory to pristine, unadulterated femininity (Agnew and Sandretto, 2015). This creates a stigma surrounding the process and those who experience it. The social and cultural definitions of menstruation are unique, because low- and high-income countries experience the consequences of such stigma in somewhat similar manners. While those areas have individual challenges, ranging from a lack of access to clean water, sanitation, and hygiene facilities or sanitary pads and tampons to poor menstrual education, women and girls in different parts of the world feel the weight of such stigma (DeMaria et al., 2019; Santora, 2019). And that discourages women and girls from seeking help, because menstruation is taught to be kept a private issue. Furthermore, abnormal menstrual bleeding may go unreported in part due to fear of trivialization and ostracism, perhaps causing women to normalize their abnormal symptoms (Tan et al., 2017).

For example, women and girls may feel shamed and embarrassed during menstruation, because menstrual blood is often associated with being foul and repugnant (Rembeck and Gunnarsson, 2004). Orringer and Gahagan (2010) found that girls of culturally diverse backgrounds similarly experience the “hygiene crisis” scenario, often learning that menstrual blood is dirty. As an example, African American girls most frequently noted that they were concerned with maintaining cleanliness during menstruation. Additionally, Mexican American girls in rural communities cited that menstrual blood was thought to be associated with poor health (Orringer and Gahagan, 2010). Bennett and Harden (2014) reinforce that point, stating that such stigma has been sustained over generations (Bennett and Harden, 2014).

As a result of the idea that menstruation is unhygienic, preadolescent girls often learn to conceal menstruation as much as possible. While menstruation is a natural, healthy sign of the female body’s reproductive capabilities, girls are taught to keep menstruation private and be embarrassed if others were to discover such a secret (Agnew and Gunn, 2019). For example, discussions about menstruation in public are often discouraged, even leading women to utilize various euphemisms, or code names, to talk about their periods with their families and friends (Agnew and Sandretto, 2015). Additionally, Chrisler et al. (2015) back up that point, noting that women are likely to opt for oversized, ill-fitting clothing and avoid physical activities like swimming during menstruation.

Secrecy about menstruation is a longstanding practice in the United States. During the 1920s, Johnson & Johnson distributed “silent purchase coupons” for women to purchase sanitary pads discreetly. A woman would exchange the coupon for a box of

sanitary pads, which were disguised in a plain, unlabeled white box. And that stigma and efforts to hide menstruation continue to persist in today's culture (Borunda, 2019). For example, Stubbs (2008) found that people were more likely to perceive a woman negatively if they are seen holding a menstrual hygiene product. It is a common theme that if a woman is unable to conceal her period, whether it be openly talking about menstruation or leaking menstrual blood onto her clothes, then she is generally subjected to ridicule (Stubbs, 2008). Today, stigma persists and has continued to allow conversations about menstruation to be repressed in public settings, perhaps discouraging women from seeking help for menstrual irregularities and disorders. If women are less likely to discuss the nature of their menstrual cycles with their families and friends, then they may not confide any abnormalities with their health care providers (Hennegan et al., 2019).

### *Impacts of Decreased Menstrual Literacy on Reproductive Health*

In the absence of helpful advice, negative attitudes may compel preadolescent girls to fear menstruation (Tan et al., 2017). People tend to hold negative views of menstruation, often citing the most negative symptoms, including severe pelvic pain and extreme irritability. And that point blurs the line between normal and abnormal menstrual bleeding. Although there is not an abundance of published research available about the relationship between menstrual education and its impacts on menstrual health management, it may be hypothesized that decreased menstrual literacy leaves girls ill-equipped and unable to detect and treat abnormalities (Bush, 2017). In addition to a general lack of knowledge, negative health care experiences, in which painful or irregular

symptoms are dismissed or trivialized, and the individual's own normalization of abnormalities may have lasting effects on reproductive health.

In many communities where menstruation is considered taboo, abnormal menstrual bleeding may not be properly understood. Such abnormalities may include dysmenorrhea, or severe menstrual cramps, and amenorrhea, or the absence of menstruation, as well as menstrual disorders such as endometriosis and polycystic ovary syndrome, or PCOS. Endometriosis is the growth of endometrial tissue, which is the tissue that lines the inside of the uterus, outside of the uterus, most commonly on the fallopian tubes and ovaries. But endometriosis can present itself in other ways, including pain during menstruation, ovulation, or sexual intercourse and infertility (Bush, 2017). PCOS is a condition associated with reproductive hormone imbalances, which causes disruptions in ovulation. Similar to endometriosis, PCOS also causes abnormal menstrual bleeding, most namely irregular menstruation, which can lead to the growth of cysts in the ovaries for those diagnosed with the condition (American College of Obstetricians and Gynecologists, 2018).

Women who experience abnormal menstrual bleeding may also experience diagnostic delays, as those conditions are largely unrecognized (Guidone, 2020). That may partly be due to the fact that women often experience negative interactions with health care professionals in clinical settings, as abnormal menstrual bleeding can be dismissed as natural or trivialized. Hillard (2014), among others, has deemed the menstrual cycle as a vital sign of a woman's health, as abnormal menstrual bleeding may indicate hormonal, psychological, anatomic, and physiological dysfunctions. However, those abnormalities are often inappropriately reassured and denied appropriate evaluation



(Hillard, 2014). One example of that is related to the female athlete triad, which is a condition that includes menstrual dysfunction, low energy availability, and low bone mineral density. The female athlete triad is most often associated with endurance athletes, like long-distance runners, dancers, and gymnasts, whose caloric output is greater than their caloric input. And that energy imbalance often leads to menstrual dysfunction, including amenorrhea, irregular menstruation, and anovulatory bleeding patterns, which cause musculoskeletal injuries or osteoporosis if left untreated (American College of Obstetricians and Gynecologists, 2017). However, one study found that only 45 percent of nurses were able to indicate menstrual dysfunction among athletes, while others considered it to be abnormal but not harmful (Kroshus et al., 2014).

Similarly, Guidone (2020) points out that such dismissive attitudes, as well as trivialization, towards abnormal menstrual bleeding exists in regards to endometriosis. Women who seek health care assistance for dysmenorrhea may be labeled as “menstrual moaners,” as cramps are often considered to be typical of menstruation. Although, dysmenorrhea may be indicative of conditions like endometriosis. In particular, the stigma of menstrual pain may persuade women to not visit a health care professional for dysmenorrhea (Guidone, 2020). For example, in one study that evaluated views of endometriosis among students in New York City, New York, Gupta et al. (2018) found that girls experienced endometriosis within a broader social context that stigmatizes menstrual health, often avoiding speaking of menstrual dysfunction and fearing judgement from others. Thus, that stigma of menstruation in health care settings creates an obstacle for women, discouraging them from seeking health care and not providing access to proper treatments for menstrual abnormalities (Gupta et al., 2018).

Further, if women associate menstruation with the most negative effects of the process, then they may normalize their abnormal symptoms. That is despite the fact that severe pelvic pain is a primary symptom of endometriosis, while amenorrhea or irregular menstruation may be a sign of PCOS or ill health. For example, while dysmenorrhea can be quite prevalent among girls, only as many as one-third of those girls seek the advice and treatment of health care professionals (Bush, 2017). Those symptoms may be difficult to identify, as menstrual education and other sources of information often teach girls to expect pain during menstruation. In addition to the trivialization of abnormalities in health care settings, that normalization of abnormal menstrual bleeding poses an additional challenge for those who struggle with menstrual abnormalities (Marsh et al., 2014). Guidone (2020) demonstrates that when health care professionals dismiss menstrual abnormalities, women are left to be their own reproductive health experts and rely on their knowledge of the menstrual cycle. However, women may learn that severe menstrual cramps or irregularities are to be expected, so they are inclined to dismiss their own abnormal symptoms. That inability to distinguish between abnormal and normal menstrual bleeding can be attributed to decreased menstrual literacy, or understanding of the menstrual cycle, which is a product of poor menstrual education (Guidone, 2020).

The failure to properly diagnose and treat menstrual abnormalities can lead to severe implications for future reproductive potential, negative economic consequences, and decreased quality of life. On average, endometriosis occurs among ten percent of women in the US, negatively impacting their quality of life due to the painful symptoms of the condition. The abnormal tissue growth is often the cause of gynecological hospitalizations due to severe pelvic pain and hysterectomies (Gupta et al., 2018). Also,

40 percent of women diagnosed with endometriosis experience infertility, as lesions on the fallopian tubes and ovaries may impair the passage of the egg cell during ovulation (American College of Obstetricians and Gynecologists, 2021). Irregular or impaired ovulation is also common with cases of PCOS, potentially reducing fertility (Office on Women's Health, 2019). Similarly, functional hypothalamic amenorrhea, which is often a result of the female athlete triad, reduces a woman's fertility when there is an inadequate amount of energy available to support fetal development (Valiant, 2016).

And severe menstrual cramps, reduced fertility, and negative economic consequences can contribute greatly to a decreased quality of life. Symptoms like menstrual pain and irregularities, which can be difficult to pinpoint or dismissed in health care settings, can negatively impact a woman's body image. For example, feelings of doubt can cause women to feel disconnected from their physical bodies, which can lead to other medical problems, if those women do not seek help. Girls' conversations with their mothers, sisters, aunts, friends, and other loved ones, as well as their teachings in schools, greatly influence their individual knowledge and perceptions of the menstrual cycle. However, those sources of information often perpetuate negative attitudes and myths and misconceptions.

There is a gap in the published literature about the extent to which menstrual education, including at home and in schools, perpetuates negative attitudes about menstrual hygiene and health. More specifically, it is unclear how much of an impact menstrual education during preadolescence, as well as negative attitudes, has on women's abilities to later detect and treat abnormal menstrual bleeding. Does poor menstrual education and a lack of biological information about the female reproductive system

exacerbate diagnostic delays of menstrual disorders? I postulate that the stigma of menstruation influences girls' perceptions of normal versus abnormal bleeding, leaving women ill-equipped to manage conditions such as endometriosis and PCOS. Thus, the purpose of this project is to illustrate the implications that menstrual education that encourages negative attitudes about menstruation has on female reproductive health and quality of life and bring attention to the ways in which menstrual education can improve to provide transformative knowledge to young girls.

## CHAPTER 2

### METHODOLOGY

As a student at Arizona State University, I researched endometriosis and wrote a number of articles about treatments and impacts of the condition for the *Embryo Project Encyclopedia*. Something that struck me as particularly troublesome was that despite the fact that endometriosis is a chronic condition with lasting negative physical and mental effects on the body, often decreasing quality of life, it is not widely recognized and often takes years to diagnose (Gupta et al., 2018). At the same time, I also completed my undergraduate honors thesis about the factors that limit women's abilities to detect and treat endometriosis in low- and middle-income countries, which revealed that in general, negative attitudes often impede women's abilities to adequately manage their menstrual hygiene and health. Because of that relationship, I wondered what specifically foster and encourage such negative attitudes and how those attitudes impact the treatment of common gynecological conditions, like endometriosis and PCOS.

Thus, interested in understanding the factors that cause women to be unprepared to detect and seek treatment for those conditions, I decided to closely examine how and what women learn about menstrual hygiene and health during their adolescence. The primary research questions were how and what do girls learn about menstruation? And based on that knowledge, in what ways does menstrual education impact girls' abilities to detect and treat menstrual disorders? Those questions helped to achieve two primary purposes of this study, which were (1) to identify gaps in knowledge pertaining to menstrual health and (2) to assess how a lack of menstrual education creates reproductive health challenges for women in adulthood.

To answer those questions, I utilized a mixed methods approach that consisted of macro- and micro-level components. At the macro-level, I facilitated focus groups to assess women's general knowledge of menstruation and their overall preparedness to manage their menstrual hygiene and health. During those focus groups, I asked women to recall their experiences learning about menstruation in various environments as well as the topics that they would have wished to know more about. Then, at the micro-level, I conducted one-on-one, semi-structured interviews with women who experience painful, heavy, or irregular menstrual bleeding to apply how knowledge of menstruation impacts the treatment of menstrual disorders. Additionally, those interviews allowed me to identify how menstrual education may be improved to encourage better health outcomes for those women.

I drafted recruitment letters, focus groups and interview protocols, and consent forms that I later submitted for approval through the Institutional Review Board. I stipulated that the participants were all to be cisgender females, because although transgender males do menstruate, their experiences are beyond the scope of the project. Further, I did not exclude pregnant women, Native Americans, and undocumented individuals from the project; however, no information that I gathered for the purposes of the project would have made any individual's background identifiable. Specifically, for the interviews, I included only cisgender females who experience heavy, painful, or irregular menstrual bleeding.

After my research proposal received approval, I recruited participants via an email announcement, sent to students who are enrolled at Barrett, the Honors College at Arizona State University. The email announcement included the recruitment letter and

directed those who were interested to directly contact me via email. Additionally, each participant was later offered the opportunity to otherwise participate in the interview process, if they met the criteria of experience with menstrual disorders. Approximately, fifty people responded to the email announcement, and so, I created a poll that became available for forty-eight hours. That poll invited women to sign-up for their preferred time slot of five different Zoom focus groups that took place throughout the first week of August 2020. Then, for the interview process, I individually scheduled dates and times for Zoom conversations via email correspondence with the participants. After I scheduled the focus groups and interviews, I emailed the consent forms to all of the participants who signed and returned those forms to me.

Originally, I planned to conduct three focus groups, each consisting of six to ten women, and fifteen interviews. However, I unexpectedly received great interest in the project and thus planned five focus groups, each including five to eight women, totaling thirty-three participants. Additionally, I scheduled fifteen interviews, although two participants did not attend and one participant cancelled. So, I later utilized twelve interviews for data analysis.

Because of the effects of the COVID-19 pandemic, all of the focus groups and interviews took place digitally, using Zoom technology. I utilized Zoom's features to record the audio of each meeting, following permission granted by the participants. Further, a moderator accompanied each focus group in order to moderate the chat, solve any technological issues, and take note of interesting and relevant topics of conversation.

First, the focus groups' questions focused mostly on women's experiences learning about menstruation and utilizing their knowledge to manage their menstrual

hygiene and health. At the start of each focus group, I asked, “What is your dream job?” That question served as ice breaker to allow the participants to introduce themselves to each other and feel more comfortable. Following the ice breaker, I began the first prompt, which included questions about the women’s initial experiences learning about menstruation, including their ages at the time, whether that was before or after their first periods, and the person or material that provided information. Then, for the second prompt, I asked two sets of the same questions, one focused on menstrual education at home and the other focused on menstrual education at school. For example, I inquired about the circumstances of those experiences as well as the topics that they would have liked sources of information to elaborate on. Finally, the third prompt centered on menstrual hygiene and health management. For that prompt, I asked questions about any obstacles that the women may have encountered, following their first periods. Further, based on their knowledge of menstruation, I questioned whether the women were well-equipped to differentiate between normal and abnormal menstrual bleeding.

Then, second, I completed the interviews, which included the same prompts as the focus group protocol as well as an additional prompt that concerned the women’s heavy, painful, or irregular menstrual bleeding and health care experiences. Specifically, I asked whether the women were aware whether their menstrual bleeding was abnormal and the steps that they eventually took to restore normal menstrual cycles as well as any obstacles that may have existed along that path to normalcy. Further, I facilitated discussions about how in the participants’ opinions, menstrual education can be improved to help other girls who develop abnormal menstrual bleeding. Overall, the interviews were semi-structured,



a specific set of questions asked during the sessions but allowed deviation from the protocol, if interesting or relevant topics of discussion occurred.

After I finished the data collection, I transcribed the recordings and completed thematic coding of the text. I utilized a transcription service to produce the transcripts, to which I made necessary edits, after revisiting and listening to each recording. During the editing process, I omitted unnecessary words such as “umm” and “like” from the transcripts. Then, I began thematic coding of the text, in which I utilized various observational and processing techniques to identify the most relevant themes.

Those techniques included word repetition, key-words-in-context, or KWIC, similarities and differences, and indigenous typologies. First, word repetition helped identify the most frequently mentioned sources of information, ages and grades that girls first learned about menstruation, and other integral concepts and descriptions that were popular during discussions. Similarly, KWIC allowed me to analyze the most frequently repeated words within their original context. Then, using similarities and differences, I examined transitional phrases such as “however” or “also” to understand the variabilities and identify the central tendencies of each theme. Lastly, I used in-vivo coding to identify segments of text that I thought were unique to social and cultural dynamics surrounding menstruation. For example, those indigenous typologies included manners in which women talked about sources of information (such as the “American Girl guide,” “cheesy 90s videos,” and notecards to preserve anonymity in schools) and menstrual hygiene (such as hiding tampons up long-sleeved shirts or carrying backpacks to bathrooms to conceal hygiene products). Ultimately, I highlighted the relevant themes that emerged throughout the text of transcripts, which were “Source of Information,” “Quality of

Information,” “Stigma of Menstruation,” “Role of Men,” “Preparedness to Manage Menstrual Hygiene and Health,” Birth Control and Hormones,” and “Ability to Identify Abnormal Menstruation.”

Several codes existed within the descriptions of each of those themes. I listed, described, and provided typical, atypical, and close but no exemplars for each of those codes, provided in Appendix C. For example, under the theme “Source of Information,” I included any person or material that provides information about the menstrual cycle or menstrual hygiene and health management. I coded the text for words, or variations of, mom, friend, family, video, teacher, Internet, nurse, and book, as well as mentions of those sources that were not as explicitly stated. Also, under the theme “Stigma,” I included different types of negative feelings or attitudes about menstruation. Those codes included illusions to secrecy, fear, comfort, attitudes, and men’s knowledge of or attitudes about menstruation. After I compiled all of the codes and exemplars for the codebook, I applied those codes to the data, which allowed me to better understand how prevalent each theme presented itself during discussions.

Utilizing those methods, I was able to acquire rich narratives from women about their experiences learning about menstruation as well as how they utilized that knowledge to detect and treat abnormalities. Further, the women described the topics that they believe may have better prepared them to manage their menstrual hygiene and health. That allowed me to discuss potential evidence-based recommendations about how menstrual education can shape girls’ perceptions of normal menstrual bleeding in an effort to better recognize and treat menstrual disorders.

## CHAPTER 3

### RESULTS

In Table A, I briefly detail those themes that emerged throughout the transcripts of the focus groups and interviews. I provide typical exemplars of each themes as they presented themselves in the focus groups and interviews, respectively. The full definitions of each code as well as typical and atypical exemplars can be found in the codebook, or Appendix C.

*Table A. Theme Definitions and Exemplars*

<b>Theme</b>	<b>Definition</b>	<b>Exemplar (Focus Groups)</b>	<b>Exemplar (Interview)</b>
Source of Information <i>Code(s): book, nurse, Internet, teacher, video, family, friend, mom</i>	People or materials that communicate knowledge about menstrual hygiene and health.	“I think the first time I really heard about it was when I was going on a school trip and my mom just talked to me and wanted to make sure I had stuff just in case things happened” (Focus Group #1).	“I had the internet at my disposal since I was a child” (Interview A004).
Quality of Information <i>Code(s): sex, tracking, tampons, biological description, hygiene, misinformation</i>	The kind of information that sources of information communicate as well as the value of it.	“I was told that when you swim your period just stops... like while you're swimming... and so you don't have to like wear anything while you're swimming. Very quickly found out that was not	“I didn't know you had to wear pads” (Interview A011)

		<p>true. My mom just didn't know. So probably like fact check a few more things” (Focus Group #2).</p>	
<p>Preparedness to Manage Menstruation <i>Code(s): cramps, PMS, emotions</i></p>	<p>The ways in which women use their knowledge to manage their menstrual hygiene and health.</p>	<p>“How your period just affects other aspects of your mood and acne and PMS and kind of kind of the whole kind of gamut of it for sure” (Focus Group #5).</p>	<p>“Just like the changes, especially like, you know, physiological changes, developing, you know, breasts at like at that age. It should be talked about, you know, it's normal to have pain in your breasts, just things like that. It's normal to feel cramps and just like the physiological changes leading up to it, you know?” (Interview A007).</p>
<p>Birth Control and Hormones <i>Code(s): birth control</i></p>	<p>The use of hormonal birth control methods, including pills, patches, injections, and rings, that women use to manage or control their menstrual bleeding.</p>	<p>“I would say another thing, in terms of how to manage it, is learning about birth control options and how that can help, because for me, since then, I've been on birth control pill for almost three years now. And that</p>	<p>“I don't think they've ever introduced birth control to me at all either at that age, so... I wasn't sure if it was because they thought, oh, it'll simmer down later on, but I felt like it wasn't until, like, I don't know, until I got birth control, I</p>

		significantly has helped with my periods” (Focus Group #1).	decided to make that choice. But apart from that, I don't think doctors were very encouraging of birth control just because... I was so young; they didn't see a reason why I would need it” (Interview A009).
Ability to Identify Abnormal Menstrual Bleeding <i>Code(s): changes, health care, menstrual disorders</i>	Girls’ perceptions of normal versus abnormal menstrual bleeding, including the existence of menstrual disorders that warrant health care assistance.	“I really struggled with an eating disorder, and my period went away for a few years, and I didn't really think it was like a problem. I was kind of just like, that's awesome. It's like I don't have my period, nice. And I didn't realize, like, how big of a deal that is” (Focus Group #5).	“I think one of the biggest things is when people teach sex education, what I've personally noticed, is that there's always this kind of like black and white story that they paint for people. Like this is how women function, this is how they will always function. They don't teach about the different types of menstrual disorders at all” (Interview A002).
Stigma <i>Code(s): secrecy, fear, comfort, attitudes, men</i>	Negative attitudes or feelings that arise from the topic of menstruation.	“I definitely sometimes felt that having my period was something to be ashamed of” (Focus Group #5).	“Getting dismissed out of hand really kind of cognitively messed up my relation with my body because I didn't trust myself

			and I didn't trust the pain that I was experiencing because of the way it had been dismissed” (Interview A010).
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Those themes presented themselves at varying rates throughout the transcripts, some emerging more evidently during the interviews than the focus groups. Most notably, the interview participants discussed their desire to know more about hormonal birth control methods—pills, patches, injections, and rings—more often than the focus groups participants, particularly citing those methods as treatments for their abnormal menstrual bleeding. Similarly, the interview participants also referenced their abilities to identify menstrual disorders at a slightly higher rate than the focus group participants. Specifically, they talked more in-depth about their experiences in health care settings and their interactions with physicians and other health care professionals, which I expected because of their abnormal menstrual bleeding. Further, I observed a larger than expected differences between how and whether the focus group and interview participants received information about menstruation. For example, the focus group participants were more likely to learn about menstrual bleeding patterns through conversations with their friends than the interview participants. Another unexpected finding was the variance between how often the different participants discussed negative attitudes and stigma, the focus group participants generally more uncomfortable with the topic than the interview participants. All in all, both populations reported similar preparedness to manage their menstrual hygiene and health.

Table B. Prevalence of Codes in Focus Groups and Interviews

Theme	Related Codes	% Prevalence of Codes (Focus Groups)	% Prevalence of Codes (Interviews)
Source of Information	Book	1.36	1.18
	Nurse	1.25	0.39
	Internet	5.56	1.31
	Teacher	3.85	1.58
	Video	3.40	0.26
	Family	2.72	1.18
	Friend	3.51	0.66
	Mom	6.58	4.86
	<b>Total</b>	<b>28.23</b>	<b>11.42</b>
Quality of Information	Sex	4.31	3.81
	Tracking	0.91	0.79
	Tampons	5.90	3.94
	Biological Description	7.94	3.55
	Hygiene	8.39	4.60
	Misinformation	0.91	0.26
	<b>Total</b>	<b>28.36</b>	<b>16.95</b>
Preparedness to Manage Menstruation	Cramps	2.83	3.55
	PMS	1.47	0.26
	Emotions	0.68	1.31
	<b>Total</b>	<b>4.98</b>	<b>5.12</b>
Birth Control and Hormones	Birth Control	3.40	6.18
	<b>Total</b>	<b>3.40</b>	<b>6.18</b>
	Changes	5.56	3.02

Ability to Identify Abnormal Menstrual Bleeding	HC	1.02	6.57
	Menstrual Disorders	7.71	6.70
	<b>Total</b>	<b>14.29</b>	<b>16.29</b>
Stigma	Secrecy	4.65	3.15
	Fear	2.76	1.58
	Comfort	6.13	3.94
	Attitudes	3.78	5.65
	Men	1.33	1.05
	<b>Total</b>	<b>18.65</b>	<b>15.37</b>

Table B reveals that there are many similarities between the themes that are presented in the focus group and interview transcripts, demonstrating that the women often related to each other's experiences. However, it is important to bring attention to the differences between how women diagnosed with heavy, painful, or irregular menstrual bleeding utilize their knowledge about menstrual hygiene and health in order to determine whether menstrual education exacerbates diagnostic delays of menstrual disorders. In the next chapter, I interpret the themes that emerged during those conversations, and more specifically, I discuss how the themes differ among the focus group and interview participants in an effort to demonstrate the impact of menstrual education on women's perceptions of normal menstrual bleeding.



## CHAPTER 4

### INTERPRETATION OF THE RESULTS

Nervous giggles and whispered conversations fill the hallways as Abigail departs the science classroom where her teacher had plastered several diagrams of human bodies on the walls. The color of Abigail's cheeks goes beyond a rosy blush to become a deep garnet as she recalls the lesson that she had just suffered. Acne, body odor, hormones... periods. Ms. Williams spoke so carelessly about topics that Abigail's mother had endlessly advised her to remain silent about. Abigail had even become so accustomed to keeping conversations related to puberty, especially periods, between her and her older sister that she did not register that she had flung the whole of her body onto Ms. Williams's desk to conceal the mess of sanitary pads and tampons as soon as the boys returned from their respective lesson.

*Don't let anyone know about your period.* It was a behavior that Abigail's mother instilled upon her, for as long as she could remember. Abigail's mother made it exceedingly clear that conversations about the monthly occurrence were not to be had in public or around Abigail's father. And even though Abigail understood periods to be an inappropriate topic of conversation, she could not completely conceptualize the purpose of them or the reason why they are so unladylike. Well, her mother explained to her that it happens to women once a month and that Abigail would need to have sanitary pads to take care of them, but that was merely the extent of their terse discussion.

That was six months prior to today, the date of Abigail's first puberty lesson in her sixth-grade science class with Ms. Williams. The girls in one room, the boys in another room, all of the students learning about the changes that their bodies would soon

endure. And suffice it to say, the video that Ms. Williams played in front of a ring of horror-stricken young women described periods much differently than Abigail's mother. Abigail had no idea that there would be... *blood*, and she still had no clue as to what an egg cell was. But after the video ended, hearing her mother's warning in the back of her mind, Abigail felt very strongly that she was not allowed to ask Ms. Williams any of her questions.

And even long after Abigail had her first period, that theme of secrecy continued. She hid tampons up her long-sleeved shirts, which seemed particularly out of place during the warmer months, and meticulously planned her trips to the restroom. Abigail never dared to ask any of her friends whether their cramps were nearly as painful as hers, rather relying on the information that she learned by eavesdropping on whispered conversations between others. More often than not, she gathered expressions laden with grief: "ugh, I hate my period," she overheard in the locker room, and "it can't be that time of the month already," her friend grumbled while changing into her swimsuit. Thus, Abigail felt reassured that her cramps were not necessarily anything out of the ordinary. All of the other girls dreaded their periods, right?

Abigail's story resembles the lengthy discussions that I facilitated during the focus groups and interviews. Prior to those discussions, I expected the women to recount their individual experiences learning about menstruation and explain how that knowledge prepared them to differentiate between normal and abnormal symptoms of menstruation. Utilizing the focus group and semi-structured interview protocols, I aimed to understand the factors that shape women's perceptions of normal menstruation, primarily by asking about their puberty education.

In this chapter, I examine three principal findings that resulted from the thematic analysis of the focus groups and semi-structured interviews. To preserve the unique differences between the participants of the two data collection methods, I first describe the findings as they were generally presented during the focus groups. Specifically, the focus groups elicited three main findings that were also popular topics of conversation during the interviews.

First, various sources of information, which range widely in quality teach women about the menstrual cycle. Here, I detail a few of the most popular sources of information, including mothers and other family members and teachers, as well as discuss the quality of those sources. Second, societal definitions of the menstrual cycle, which often perpetuate negative attitudes and misconceptions, often shape sources and quality of information, contributing to stigma of menstruation. On that point, I detail the participants' experiences with feelings of shame, embarrassment, fear, and discomfort about menstruation. Specifically, I discuss how those feelings shaped the participants' perceptions of normal versus abnormal menstrual bleeding. And third and last, women are often unprepared to manage their menstrual hygiene and health. Here, I elaborate on the participants' ideas about abnormal menstrual bleeding and the topics that they believe were missing from their educational experiences.

Then, I separately discuss how those findings presented themselves differently, based on the recollections of the semi-structured interview participants. Some of those findings were presented more strongly during the interviews, women who experienced abnormal menstrual bleeding reporting more nuanced experiences because of their conditions.

*Finding #1: Various sources of information, which range widely in quality, teach women about the menstrual cycle.*

Women received information about the menstrual cycle from a wide variety of sources, most notably including mothers and other female members of their families, teachers, school nurses, and puberty books. Additionally, women seek out information that hygiene companies previously printed in pamphlets on the Internet, using various social media platforms. But principally, women reported that their mothers were their first source of information, conversations between mother and daughter beginning between approximately eight and twelve years of age. Mothers were found to generally prepare their daughters to later learn more technical information about the menstrual cycle in school, building foundational, or perhaps more personal, knowledge about menstruation. One participant described that her mother gave her basic information about menstruation, in preparation for the first occurrence, stating, “I think the first time that I really heard about it was when I was going on a school trip, and my mom just talked to me and wanted to make sure I had stuff... just in case things happened” (Focus Group #1).

Some women reported gave rather than personally divulging the details of the menstrual cycle, mothers often gifted their daughters puberty books. Among those women, few discussed that their mothers read the book with them, while others recalled that their mothers simply instructed them to read the book on their own time. One of those books that women commonly mentioned was *The Care and Keeping of You* by Valorie Schaefer, often referred to as the “American Girl guide” after the company of the same name. One participant described that book as “not comprehensive enough” (Focus

Group #3). Likewise, other women reported that they sought out information in other printed materials, focused on women's health, "I want to say I was about ten, when I first learned about it [menstruation], and I was reading about it in a book about women's health that was designed for kids my age" (Focus Group #2).

Similarly, most women in the focus group described that their mothers told them about menstruation prior to their first periods, with very few exceptions including women who did not know about menstruation until they experienced menarche. However, of those few exceptions, some women did not feel comfortable later discussing menstruation with their mothers. For example, one participant recalled, "I don't know if I was emotionally prepared. I didn't really freak out, I was really calm about it, but my mom and I never really talked about it, so I didn't feel comfortable telling her" (Focus Group #1).

Outside of school, other sources of information were found to include friends and family members, including sisters, fathers, cousins, aunts, and uncles. Particularly, women reported that their friends were one of their most common sources of supplemental knowledge and revealed that they often felt more comfortable discussing their periods with their closest companions. In fact, women stated that as they grew older, they learned more about abnormalities and menstrual disorders through their friends' experiences, exchanging personal stories. In other cases, in which mothers were not the primary source of information, women discussed that their other family members explained the menstrual cycle to them. For example, one participant recalled, "My mom wasn't very specific about it, so then my aunt, who's a nurse, actually... when I had my first period, she came and told me about it" (Focus Group #3).

Some women also received additional puberty lessons at school, learning more technical information about menstruation and how it relates to the menstrual cycle, female teachers and school nurses usually being the sources of information. Those lessons initially occurred during elementary school years, including third through sixth grade, but some participants reported that they also received follow-up lessons during middle and high school years. Nearly all of the participants who received puberty lessons at school stated that those lessons were gender-segregated, and some participants recalled that the school nurse was present to answer questions or provide supplemental information. For example, one participant stated, “They separated all the boys and women, and they had all the female teachers, including the school nurse, talk to the women and they had some boy teachers talk to the boys about puberty stuff.” (Focus Group #2).

Women recalled that their teachers typically provided technical information about puberty and menstruation. In other words, women reported that teachers, among other sources of information in schools, were less personal than their mothers and other family members and friends. For example, one participant stated that the information that she learned in school was presented “not like the way [her] mom did” (Focus Group #1). Further, some women noticed that state and local governments determined such information, their teachers reading directly from state-issued materials. Also, among a number of participants who received puberty lessons at school, female teachers showed a video to disseminate the information. One participant stated, “We didn't really have a health curriculum at my school, it was like one of those really cheesy old 90s videos, where like the kids are like acting it out or whatever. It was like sixth grade. They took us to the cafeteria and it's like, oh, here's this video. Watch it.” (Focus Group #3). In

contrast, other women discussed that they did not have puberty education in their schools and often cited a lack of attention to the importance of sexual and reproductive health information. One participant mentioned, “I got lucky, because I had sisters. So, I learned everything from asking questions and having talks with my mom. But I never learned anything about that from school” (Focus Group #5).

The Internet was another source of information, especially during the later years of women’ lives, often supplementing gaps in knowledge about menstrual hygiene products such as tampons and menstrual cups as well as menstrual disorders. Some women reference social media platforms and YouTube videos, in which other women document their personal experiences managing their menstrual hygiene and health. Specifically, women largely relied on the Internet as a trusted source of information, if they desired more information about sexual health and pregnancy or endured painful, heavy, or irregular menstrual bleeding. One participant discussed, “As I continued to grow up, I would look online for more information about biologically, what was happening and how that ties into like sex and pregnancy. And I didn’t have a conversation about it, but it was something I would look up online” (Focus Group #2).

Further, women of various cultural backgrounds demonstrated different views about their menstrual education experiences. Although this aspect is not a salient point, based on the transcriptions of the focus groups, and beyond the scope of this project, it is valuable to point out that communities outside of the US may approach menstrual education differently. For example, in this study, most women received their menstrual education in the US, but two women recalled that their lessons occurred in Mexico and India, respectively. Both women explained that neither received any sort of formal

menstrual education in their schools and obtained most of their knowledge from other resources such as books and the Internet, as well as conversations with their friends.

Those examples may demonstrate the varying dissemination of knowledge.

The content, accuracy, and completeness of the information that those sources pass down to young women is largely dependent on social and cultural values that define menstruation and in general, female reproductive health. In the US, menstruation is a stigmatized topic, associated with ideas that the natural, biological function is dirty and embarrassing, meant to be discreetly hidden from others. Because of that, the quality of information may be incomplete, reflecting a desire to conceal menstruation to the upmost extent. Consequently, sources of information may not typically address menstrual disorders during at-home or school menstrual education lessons, leaving women complete research on the topic, utilizing the Internet and social media platforms.

The women who participated in the focus groups reported similar experiences. Popular topics that those women learned about were largely concerned with menstrual hygiene management, rather than ovulation and fertility and abnormal symptoms of menstruation. However, many women expressed that the content of their menstrual education experiences were not very comprehensive, some recalling that at that time, they did not fully understand the purpose of menstruation. What's more is that a majority of puberty lessons seemed to be focused on sexual health rather than female reproductive health. That is more prevalent during later academic years, in which older women may require knowledge of what is considered to be normal versus abnormal menstruation. On the other hand, some women reported that despite minimal education on the topic, they felt confident that they could detect abnormal symptoms of menstruation, one participant



stating, “Once I had my first menstrual cycle, I felt like I had enough resources and adequate help from my parents and from the Internet and everything to where I felt like I was okay and had enough information about it in order to deal with it” (Focus Group #3). Thus, it is possible that a desire for more detailed information about menstrual disorders may be more prevalent among those who have experienced such abnormal symptoms.

Another common aspect of the quality of those women’ sources of information was that they often presented what may be referred to as “essentialist” ideas about menstruation, meaning that all women are bound to experience similar symptoms during menstruation. Some women who had personal experience with abnormalities – painful, irregular, or heavy menstrual bleeding – relayed that such ideas influenced them to feel marginalized. For example, one participant provided a desire for menstrual education to include more variability and reported, “I wish someone would’ve told me that everyone is different. You’re not going to have the same period as the girl next to you, yours could be heavier or lighter, or it could last longer or shorter, or something like that. And I also wish someone had told me, like a general amount of how much blood or how bad cramps could be, because I was just like entering such an unknown situation with so many, like, open ends” (Focus Group #1). In that example, the participant recalls that her menstrual education experience did not talk about what to expect during menstruation but also failed to emphasize that all women’ bodies are different.

Additionally, some women explained that sources of information parroted common social and cultural ideas that menstruation ought to be concealed, as well as various misconceptions. For example, during school puberty lessons, a common practice was that women asked their questions anonymously, using notecards that are passed to

the teachers who answer those questions in front of the class. Also, other women reported that at times, their sources of information spread misinformation about menstruation, including ideas that swimming stops menstrual bleeding or tampons would cause them to lose their virginities.

And although those social and cultural ideas and misconceptions about menstruation may be harmful to women' knowledge of abnormalities, some women reported that sources of information ought to address those issues as to dispel any negative attitudes or doubts. Those women even expressed a desire to have a balance of social and biological understanding of menstruation. On that point, one participant stated: "I think it was very anatomy-based and kind of theoretical, when they talked about it. And it didn't feel like I had any idea what the actual experience was going to be like. There was no personal element of it. Like, you know, obviously the adult teachers in the room weren't sharing their first experience or how they felt about it or anything. It was just like... this is the female reproductive system and this is what happens during the menstrual cycle. But there was no indication of like what our personal experience would be or what the range of personal experiences could be" (Focus Group #3).

In that example, the participant recalls that her menstrual education experience included strictly biological information about menstruation, which did not help to ease feelings of discomfort. Specifically, the participant elucidates that menstrual education ought to weave together accurate, biological information about the menstrual cycle, while making such information personal, to help women feel more comfortable about their changing bodies.

*Finding #2: Societal definitions of the menstrual cycle, which often perpetuate negative attitudes and misconceptions, often shape sources and quality of information, contributing to stigma of menstruation.*

The stigma of menstruation inspired several discussions during the focus groups, women often referencing stigma as a proponent of negative feelings toward menstruation. In response to that, women collectively expressed a desire for menstrual education to normalize the topic rather than discuss the menstrual cycle as an unfortunate circumstance that must be kept private. Still, women recommended that sources of information talk about and address the stigma of menstruation in order to point out and invalidate misconceptions. In regard to that point, one participant stated that it would “lay the groundwork for more open conversations” (Focus Group #2).

Nearly every participant reported, to an extent, feelings of shame and embarrassment about menstruation, often beginning during their first conversations about the topic. Those feelings were prominent among women who discussed interactions with their mothers, a majority of women recalling not wanting to have such awkward and uncomfortable conversations with their mothers. For example, one participant explained, “I remember being like, ‘oh, my God, I do not want to be alone with my mom,’ because I don’t want her talk about this with me anymore. So, I definitely felt uncomfortable” (Focus Group #1). While discussing similar feelings of embarrassment, some women referenced the taboo surrounding blood, which is often associated with injury and illness, as the foundation for their uneasy feelings toward menstruation. Specifically, one participant recalled that during her childhood, she felt that the idea of menstrual bleeding was “gruesome” (Focus Group #1), while another participant stated that menstrual blood

is often viewed as “disgusting” (Focus Group #4). Similar to that point, women who have older sisters or friends discussed their fears about menstruation because of their family members’ and friends’ complaints about cramps. For example, one participant recalled that her older sister described menstruation as “so terrible” (Focus Group #2), causing her to dread her inevitable menarche.

Further, some women discussed that blood caused women to fear or be uncomfortable about menstruation, acknowledging that menstrual blood carries a unique type of stigma that other types of blood do not share:

I just don't understand why it's seen as gross. It's literally the one type of blood that's actually supposed to come out of your body. And yet we see, you know, these massacres and these video games where blood is spurting everywhere, and like, that's cool. But when the one time you're actually supposed to bleed, and that's good and healthy, it's like not cool and disgusting and shameful. I think that's just the biggest thing is [...] the double standard of blood, in general. And for women, it's ‘don't talk about it,’ but for men, it's okay if you make all this blood (Focus Group #4).

In that example, the participant brings attention to a compelling point that menstrual bleeding is normal and healthy, while an absence of menstrual bleeding may be indicative of an underlying health condition but is still viewed as “shameful.” Whereas, according to the participant, blood that appears in violent video games is viewed as “cool” (Focus Group #4).

Other women also reported being initially more fearful of the unknown rather than menstrual bleeding in particular, reinforcing a need for menstrual education to start

at an early age. One participant stated that she was “a little uncomfortable,” primarily because she did not know the purpose of menstruation. She continued, stating, “And like she [sister] was talking about how she was bleeding and that her boobs were getting bigger. And I was like, ‘that’s strange, like what is that?’ I remember as a kid, I was like, ‘oh, I’m kind of scared to get it now,’ or I was like, ‘I’m not sure what it is exactly.’ And then, yeah, we [school] had a video, and then, it kind of made more sense, but I was still uncomfortable with it” (Focus Group #4). Here, the participant explains that as she learned more information about the menstrual cycle, her feelings of fear subsided; however, she remained slightly uneasy about the topic.

Often, those feelings of fear did not subside after menarche, every focus group discussing the intimating idea that menarche is a mark of womanhood. Collectively, women desired less pressure on the event as a tool to decrease feelings of fear about menarche. For example, one participant recalled that she was scared for “a transition to a new phase in [her] life.” However, she continued, “Hearing more stories would make me feel less alone and make it more normal, because it’s a change. But if it’s a change that I feel like I heard more people experiencing, I would feel like it’s less of a change, and I feel like it’s more normal” (Focus Group #3). The desire for older women to share their own stories about menstruation was popular among the focus groups, many expressing that the other female figures in their lives provide relatable and practical information that would prepare them to manage their menstrual hygiene and health.

According to the focus group discussions, women reported secrecy as another practice that contributes to the stigma of menstruation. Recalling their puberty lessons, women learn that menstruation is a private matter that is not to be discussed with others.

For example, while specifying her experience watching a video about menstruation in school, alongside her classmates, one participant reported, “Our parents just always taught us that we shouldn't be talking about our bodies outside with anybody who isn't family. So then, it was just a very uncomfortable experience for me” (Focus Group #3). Because women often learned that menstruation ought to be concealed, they may feel uncomfortable, as the participant suggests, talking about it with friends, school nurses, teachers, or health care professionals. In response to that point, some women expressed a desire to feel more comfortable while discussing the topic with their friends in order to gain more perspective on others' various symptoms of menstruation. Women discussed that it was imperative that sources of information create an environment in which they feel comfortable enough to raise questions about their menstrual health. Some participants agreed, stating that such environments would allow those who experience painful, irregular, or heavy menstrual bleeding to share their abnormalities and seek health care assistance.

Further, women also discussed secrecy in regard to menstrual hygiene, specifically stating that they learned to be diligent about hiding sanitary pads and tampons. For example, whenever she was in school, one participant stated that she often struggled to hide sanitary pads, an obstacle that several other participants agreed was a common experience (Focus Group #2). The participants discussed that hiding sanitary pads, taking their backpacks to restrooms, and concealing tampons up their long-sleeved shirts were common tactics that helped conceal hygiene products from others. Similarly, a few women detailed that they were hesitant to ask for hygiene products from their classmates, school nurses, and teachers, because they reported feeling embarrassed doing

so. According to one participant, that embarrassment often resulted in women creating makeshift hygiene products with toilet paper (Focus Group #4).

Likewise, some women discussed that they felt like they were not allowed to ask questions about the menstrual cycle, as it seemed inappropriate to do so. In multiple focus groups, women related to each other on that point, recalling that they were interested to learn more information about the menstrual cycle but felt forced to create a facade of disinterest in order to not be embarrassed or shamed for their curiosity. On that point, some women showed a desire for anonymity, while asking questions about their reproductive health, because they referred to the topic as inherently intimate and thus wanted to remain discreet. On the other hand, other women plainly desired normalcy surrounding conversations about the menstrual cycle. In general, though, because of that stigma, women stated that they were less likely to seek help and ask questions about abnormal symptoms. Even while discussing their experiences with abnormalities during the focus groups, one participant used phrases like, “this is a little TMI [too much information],” indicating that additional details may be inappropriate (Focus Group #2).

Other negative attitudes that contributed to the stigma of menstruation, according to the focus group discussions, included suppression of the menstrual cycle, ideas that menstruation is unhygienic, and the stereotype of the “mad woman.” General negative attitudes about menstruation seemed to influence women to suppress their own menstrual cycles, one participant “wishing that [she] didn’t have to go through periods every month” (Focus Group #3) Other women also discussed the inconvenience of menstrual hygiene management, often fearing that menstrual blood would leak through their clothes or that people would view them as unhygienic. For example, one participant articulated

her difficulties, “I feel like that was definitely a challenge of having sort of incidences that happen at school and just feeling like if I were to say something about it, everyone would just think of me as a really disgusting person, which, in actuality, that shouldn't really be a worry for someone who is menstruating” (Focus Group #4).

Additionally, other women discussed the stereotype of the “mad woman,” which paints menstruating women as emotional and hysterical. Specifically, some women recalled others accusing them of exaggerating severe cramps and other abnormalities that may be indicative of menstrual disorders. For example, one participant recalled, “There’s such a huge lack of understanding, where people think that women are over exaggerating about cramps or how painful it can be or how emotional you can get, that you're just saying that women are too emotional and there's no reason behind it” (Focus Group #4).

Nonetheless, depending on the source of information, negative attitudes about menstruation may vary. Women may be more comfortable talking about menstruation with their friends rather than family members, teachers, or health care professionals. In the case of one participant, she stated that “there wasn’t much of a stigma around it [menstruation]” but only confided in her friends about her own period, referencing that it was uncomfortable to discuss the topic with older women (Focus Group #1). At the same time, some women reported that after having their periods for several years, they became more comfortable talking about. Also, few women mentioned experiencing less negativity, in general. Those women often had sisters who were close confidantes in which they could comfortably discuss menstruation. For example, one participant recalled, “Once my younger sister, who was like two years younger than me, had her first period, then it was an open conversation in my house. And then, we kind of all had to talk



about it” (Focus Group #3). All things considered, several participants felt optimistic about the future, stating that there has been increasingly accessible information about female reproductive health and menstrual disorders via the Internet and social media. Illustrated by one participant, “it seems like we’re heading in the right direction” (Focus Group #3).

Additionally, women also discussed the role of their male counterparts in the treatment of menstrual disorders, largely focusing on how men can improve their attitudes to create more supportive communities. Because an unsupportive community may perpetuate feelings of shame and embarrassment, misconceptions, and stigmatized ideas about menstruation, women acknowledged that the role of men was a significant aspect of menstrual education.

Specifically, women articulated that poor menstrual education not only negatively impacts their menstrual hygiene and health but also encourages a lack of knowledge of female reproductive health among men. Based on several discussions during the focus groups, women expressed a desire for men to be present during puberty lessons that focus on the menstrual cycle. Women formulated that conclusion on the basis of current puberty lessons often being gender-segregated, women and boys only learning about their own reproductive health. For example, one participant discussed, “I also agree with talking to men about it, because I remember in my school, they had separated the women and the boys. And only the women talked about periods. It was kind of like something you just don't talk about with men. And I even remember, like my brother, the first time he saw a pad, he freaked out. And he was only two years older than me” (Focus Group #1). That participant addresses the idea that women ought to hide conversations about

menstruation from boys, which may be a practice that gender-segregated puberty education encourages preadolescents to practice. As a result of such secrecy, women expressed that men's adverse and negative reactions to menstruation, like that of the participant's older brother, allow the biological function to seem embarrassing.

Similarly, women reported that the men in their lives were more likely to hold negative attitudes and misconceptions about menstruation than women. On that point, one participant recalled that her boyfriend thought that sanitary pads attached to the female body (Focus Group #1), while another participant stated her frustration that men often respond to women's heightened emotions with, "you must be on your period" (Focus Group #2). Those negative attitudes and misconceptions led some women to articulate their discomfort confiding in men such as their fathers, friends, or romantic partners about their menstrual hygiene and health.

For example, some women who reported that they grew up in single-parent households struggled to manage their menstrual hygiene and health, being less comfortable asking their fathers for assistance than their mothers. One participant recalled, "My parents were divorced, and so, going to my dad's house was always really, really awkward, because I didn't feel comfortable enough talking to him about needing supplies. So, like someone else said, I would either use toilet paper, whenever I was really young and I had first gotten it. Or, I just started bringing my own stuff over from my mom's house, because I didn't feel comfortable asking him to buy me anything. So that was probably the hardest part about managing my period" (Focus Group #1). In that example, the participant explains the specific obstacles that may arise, if men do not have an active role in the dissemination of knowledge about menstruation. One of those

obstacles includes a lack of access to menstrual hygiene supplies, the participant recalling that she did not feel comfortable enough to ask her father for sanitary pads or tampons.

*Finding #3: Women are often unprepared to manage their menstrual hygiene and health.*

Women commonly reported that their sources of information often provided very basic information regarding menstrual hygiene and health, excluding valuable material such as information about ovulation and fertility or how to take care of severe cramps. For example, many women expressed that until they reached adulthood, they did not know how to track their menstrual cycles. Consequently, they were unable to notice how regular, or irregular, their periods were. Some of those women further described that it was not until they discovered the handiness of period tracking mobile applications that they deduced that their periods were somewhat irregular.

Women also articulated a desire to learn more about those topics that were missing from their initial lessons, reporting that such information may have better prepared them to manage their menstrual hygiene and health. One of those topics that women sought more information about was methods to control menstrual bleeding other than sanitary pads, including tampons and menstrual cups. Women typically discussed knowledge of those hygiene products while recalling that they learned to control their menstrual bleeding through experience. For example, one participant stated, “I don't feel like I understood how to manage it as well or how to even, like, use a pad or tampon, really. That was kind of something I just had to ask my mom about and learn through trial and error, kind of” (Focus Group #1). Other women further reported feelings of fear upon menarche due to a lack of knowledge of how to control their menstrual bleeding, one

participant describing her first period as a “blood bath” and “murder show” (Focus Group #3).

Nonetheless, women also recommended a focus on the concept of “beyond bleeding,” indicating that they were unprepared to manage their emotional health during their periods. On that topic, one participant explained, “I wish that I was more informed of the symptoms not just related to the period itself, but also outside of the period. So, for example, during PMS, I have very specific things I do. I become like really lazy. But I used to think, “oh, I'm just lazy, this is my fault,” when in fact I was just PMSing” (Focus Group #3). Here, the participant discusses that she was unprepared to handle premenstrual syndrome, or PMS, unaware that the strong emotions that she often feels during the days leading up to her period were the result of her body’s hormonal changes. In the next section, I discuss hormonal changes, as well as birth control methods, in-depth; however, it is important to acknowledge that knowledge of hormonal changes and those aspects that women deem to be a part of “beyond bleeding” were one of the largest obstacles among the women studied.

Similarly, some women indicated that they were unprepared to recognize the ways in which their habits affected their menstrual cycles. For example, one participant discussed that she was unaware that stress caused her menstrual cycle to vary in length, leading her to panic. She explained, “I do remember that no one really talks about that you could miss your period from stress if exam times were around. And so, I know that for myself and other women, sometimes we would get panicked if we missed it during stressful times, because we thought that we were infertile or some women thought that they were pregnant, when it's completely normal to miss it sometimes it from stress”

(Focus Group #1). Along with stress, women reported physical activity and diet as factors that they were unaware could alter their menstrual cycles (*I further elaborate upon the theme of “Ability to Identify Symptoms of Abnormal Menstruation” below*). Women commonly attributed that lack of knowledge to the essentialist view of menstruation that many of their sources of information adopted.

On the other hand, the focus groups demonstrated a range of women’s preparedness to manage their menstrual hygiene and health, few women explaining that they felt well-prepared upon menarche. Because of that, it was further evident that depending on the source and quality of information, women may be better prepared for menstruation. For example, one participant owed her positive experiences to her sources of information who created an environment in which she felt comfortable to ask questions, stating, “I felt prepared for it, but I think part of that was because the people around me that were talking to me about it treated it as a very normal thing, and questions and learning about it were so normal and there was nothing strange about it” (Focus Group #1).

When asked about information that may have better braced them to manage their menstrual hygiene and health, women also commonly discussed the topic of birth control. Some women described that depending on the source of information, birth control was a negative topic of conversation. For example, one participant discussed that she learned about birth control through teachings of the Catholic Church, stating, “I’m Catholic, and I used to go to church a lot, and I remember one time, we had like a Sunday mass where we had someone come speak about birth control and how it was a sin [...], so I was confused and thought that it was a bad thing. Growing up, you know, I had a couple of

friends that were on birth control, and I started to understand the benefits of it. So that was definitely confusing to me” (Focus Group #5).

Here, it may be observed that women, especially those who experience painful, irregular, or heavy menstrual bleeding, may lack access to potentially vital information about birth control, if their sources of information encompass negative attitudes toward the topic. In response to that point, women reported that they retrieved a majority of their knowledge about birth control through their family members and friends, the Internet, and various social media platforms. For example, one participant (Focus Group #1) explained that she only decided to use a birth control pill to relieve the pain of her severe cramps, because her uncle, a gynecologist, recommended it to her.

Because sources of information were found to rarely discuss the topic of birth control – particularly, in terms of how the chemical makeup of some birth control methods may regulate and control the menstrual cycle – some women discussed that they struggled to find ways to manage their abnormalities. Relating to each other’s similar experiences, those women ultimately expressed a desire to include conversations about birth control during their preadolescence. Although acknowledging that such conversations would be highly improbable in schools that hold varying beliefs about birth control, those women stated that other sources of information may discuss birth control in an effort to decrease the time between the onset of abnormalities and treatment. One participant described her own experience and reported, “In terms of how to manage it, learning about birth control options and how that can help. Because for me, since I've been on birth control pill for almost three years now, that significantly has helped with my periods. And I struggled for a really long time, because I had really bad symptoms

and did not know how to deal with it. And so, I think just knowing that there are options is really important” (Focus Group #1).

Notably, that example demonstrates that women utilize birth control methods for reasons other than contraception but also shows how a lack of knowledge about birth control contributes to the poor treatment of menstrual disorders. Alternatively, while discussing birth control methods, women brought up several points about negative attitudes associated with the topic, acknowledging that birth control is largely talked about within the context of contraception. For example, one participant stated, “I know this is kind of an issue recently anyway, about like abstinence-only education and how birth control is not even really discussed in public schools, because, you know, they don't want to send that message. But also, that poses a problem, because birth control can be used for other things, like to help regulate periods” (Focus Group #3). Thus, because of its contraceptive aspects, sources of information were determined to not typically discuss birth control methods as treatments for menstrual disorders. However, women emphasized that if their sources of information had offered birth control methods as a treatment for menstrual disorders, then they may have sought relief earlier, better managing their health.

Further, women reported that they were ill-equipped to determine the proper birth control method that would effectively treat their irregular menstrual cycles. Due to a lack of education about the topic, women expressed that they were unaware of the different side effects of birth control methods and were not prepared to know which of those methods would work best for their bodies and circumstances. For example, some women discussed that their birth control methods caused their menstrual cycles to occur more

sporadically, leaving them unable to discern whether those irregularities were indicative of menstrual disorders. Thus, those women expressed that they would have preferred more extensive information about each birth control method. Other women articulated their frustration, recalling several interactions with health care professionals and various attempts to discover which birth control method worked best for their bodies.

To elucidate that point, one participant discussed, “I feel like, as for treatment for issues, it was always just, ‘oh let's try like a different concoction of birth control,’ and no one was actually telling me what was up or what I could be doing in my life. It was more just like, ‘let's drug her up until everything's okay.’ So, lack of support there” (Focus Group #4). In that example, the participant expresses a desire for not only more information about the birth control methods that health care professionals prescribe to treat irregular menstrual cycles but also recalls a lack of support from those professionals.

Continuing on that point, depending on the support of the health care professional, some women reported that they did not experience difficulty obtaining an effective birth control method as a treatment for their abnormalities. For example, one participant discussed the importance of those professionals, “I went through a couple of pediatricians and a family doctor before and got a call, just before actually finding a gynecologist, who was able to explain the hormone process to me and why it is that she's prescribing a certain dosage of birth control to me. And again, it's upsetting that it's so rare that, you know, there aren't more physicians out there who will just be willing to explain it to you” (Focus Group #4).

The focus groups were also asked about their experiences learning about menstrual disorders such as endometriosis and PCOS, which sparked conversations about



their abilities to identify symptoms of abnormal menstruation. Referencing their puberty lessons, some women reported that they were not adequately prepared to identify such symptoms, largely due to a lack of knowledge of what normal menstruation ought to look like. Specifically, relating to the idea that sources of information tend to perpetuate ideas that all women experience menstruation in the same manner, some women reported that those sources did not acknowledge examples of abnormalities and how to treat them. For example, one participant recalled, “I thought that all women went through the exact same symptoms, so I didn't realize that feeling like you're being gutted every month wasn't normal. So, I think just knowing that there are different levels of pain and different levels of symptoms would have been good to know, because maybe I would've gotten help sooner.” (Focus Group #4). The participant explains that her menstrual education experience impressed upon her that women would experience similar menstrual cycles. For that reason, she assumed that her severe cramps were a normal, though unfortunate, consequence of the female reproductive system.

Other women described their knowledge of menstrual disorders as being aware of what is normal for them, acknowledging that not all women experience similar menstrual cycles. However, it may be possible that such a response is a nod to the normalization of abnormal symptoms of menstruation. To illustrate that point, one participant shared that she was previously unaware that her irregular menstrual cycles were abnormal and explained, “Somewhere in high school, or maybe late middle school, was when I had 50 days between a period and then some short and long, whatever, irregular. But I didn't think that was really that atypical” (Focus Group #1). Regardless, women retrospectively

expressed a desire for more information about menstrual disorders and how to recognize menstrual bleeding that is abnormally painful, heavy, or irregular.

Specifically, women articulated that sources of information ought to emphasize the ways in which factors such as stress, diet, and exercise may affect the menstrual cycle. Some women expressed that they were surprised to discover that their everyday habits may influence hormonal imbalances, altering the frequency, length, and heaviness of their periods. In one instance, a participant discussed that when she joined a cross country team and began to increase her amount of high-intensity exercise, she developed amenorrhea:

When I first lost my period, it was after I had joined cross country and just didn't know how to properly fuel my body for those types of workouts. So, I had lost a ton of weight, at that time. And with the weight loss, I also lost my period. And I remember when I first talked to the doctor – it was a pediatric endocrinologist – she was very quick to say, ‘you just need to... you need to maybe cut back a little bit on the exercise and you need to eat a lot more’ (Focus Group #4).

Further, some women noted their personal interest in female reproductive health, emphasizing that they learned more about menstrual disorders from their own research. Based on several discussions during the focus groups, if women encompassed a personal interest in female reproductive health, then they were more inclined to be more knowledgeable about menstrual disorders. For example, one participant shared that she earned a “wealth of knowledge” about painful, heavy, and irregular menstrual bleeding due to projects that she had worked on about menstruation (Focus Group #1). Women largely reported that they conducted their personal research using sources such as

YouTube videos and other social media platforms and cited the usefulness of others' personal stories. That point is notable, as several women expressed a desire for others to share their experiences with menstrual disorders in an effort to increase awareness about the topic.

Among women who reported being diagnosed with menstrual disorders, a majority tended to have increased knowledge of their own diagnosis as well as other menstrual disorders, given their firsthand experience. Several of those women noted that prior to their diagnoses, they were not completely aware that their symptoms were indicative of a menstrual disorder. For example, one participant, diagnosed with PCOS, attributed her knowledge of the condition to her own experiences. On the contrary, she admitted that previously, she “didn’t really care, because it didn’t affect [her] life” and “didn’t have any friends who would talk about it openly” (Focus Group #2). The participant’s latter point elucidates that there is a certain secrecy surrounding menstruation that creates difficulties for women to access information about menstrual disorders. On the other hand, due to a lack of conversations about normal versus abnormal symptoms of mensuration, some women discussed their panic and fear about irregularities. Specifically, those women discussed absent or late periods within the context of being pregnant or infertile, citing their lack of knowledge about factors that cause irregular menstrual cycles. One participant recalled, “I’m definitely someone who is like a hypochondriac, so if I have a symptom, that's something that I've never had before, I'm looking it up like, ‘Is this anything? Do I have a disease?’” (Focus Group #3).

Further, some women articulated that their health care professionals perpetuated common misconceptions and deemed abnormal symptoms of menstruation – particularly,

severe cramps – were to be expected during menstruation. Those messages, according to the women, created further confusion about what is considered to be normal menstruation as well as trouble seeking health care assistance to remedy abnormalities. For example, one participant explained, “It feels like your doctors also have a lack of education about the nuances of menstruation. And then, everybody gets kind of lost in the confusion, which isn't very helpful” (Focus Group #4). On the contrary, other women expressed that they were confident in their abilities to detect abnormalities and report them to their gynecologists or other health care professionals. It seemed that, as in other scenarios, depending on the patient-health care professional relationship, women may have access to better quality care than others.

### Interview Findings

Those three findings were also evident during the interviews, although the participants presented specific points, related to menstrual disorders, more strongly or even differently than the focus group participants. For example, the interview participants did not mention specific sources of information as often as the focus groups participants, demonstrating their unique menstrual education experiences. Specifically, among the focus group participants, friends were one of the most common sources of information. However, interview participants did not express similar interactions between themselves and their close friends. To illustrate that point, one woman who has PCOS recalled, “I wanted to tell someone else so bad, but I didn't want to make it a big deal” (A004), demonstrating her hesitation to share her experiences with abnormal menstrual bleeding

with others and further underscoring other themes such as secrecy and negative attitudes. In fact, that woman continued to express contempt for her abnormalities, stating:

I don't feel a lot of pain, but it's inconvenient. So, when it's, I guess, shedding the layers. It's not really that painful like at all, but it's very inconvenient. And I think I was bothered with that fact. Why do I have to deal with this inconvenience? While dudes don't? Yeah, and I remember when I first got it, I was like, 'Wait, how do all the superheroes do it? Or like if you're in space and they don't have like... What? How do you deal with that?' It was stuff like that, that bothered me. Like how do the army folk do it? Anyway, I thought it was like something of a weakness (A004).

Here, the participant discusses that although her pain is bearable, she likens menstrual cramps to an inconvenience. Alongside her statement that she did not want her abnormalities to be a "big deal," it may be possible that the woman did not want others to know that she struggles to manage her menstrual health. Rather, she deliberates that she may have been too weak to handle what she thought to be a typical, yet unfortunate, consequence of being female.

Further, the interview participants mentioned the Internet as a source of information much less than the focus group participants. The reason for such a large difference remains unclear, but it may be hypothesized that the interview participants gathered their knowledge through their firsthand experiences with abnormal menstrual bleeding. During one interview, a woman who has endometriosis reported, "It was only because my mom has it and my twin sister was diagnosed before me. And so, my mom ended up having a complete hysterectomy by the age of forty-two. And so, she did kind

of talk to us about that. And then, when my twin was diagnosed before me, then we talked about that, as well. I was prepared only for that reason. If she never was diagnosed before me, then I... I've never even heard of endometriosis" (A007). Here, the participant shares that she only became aware of endometriosis as a possible explanation for her painful menstrual bleeding because of her family members' experiences. This demonstrates that sources of information often neglect discussions about abnormal menstrual bleeding, leaving some women ill-equipped to later detect conditions such as endometriosis.

What is interesting is that although the interview participants reported fewer sources of information, they experienced similar levels of preparedness to manage their menstrual hygiene and health as the focus group participants. For example, another woman who has endometriosis recalled her first experiences learning about the menstrual cycle, in which her mother gifted her a puberty book. The participant described the contents of that book as "gross" and "creepy," potentially demonstrating that if information is presented impersonally, then the topic of menstrual bleeding may be somewhat distressing. However, reflecting upon those feelings, she discusses that if her mother had provided more open conversations and information about the purpose of menstruation, then she may have felt more comfortable about the topic. Specifically, she stated, "I probably would have liked to learn maybe more about why [periods happen], I guess. Because that would have made it a little less scary or weird and probably also how to handle cramps or something like that, because I didn't even know like what that was when I had cramps. I didn't know what was happening." So, depending on the source and quality of information, women may learn to have negative attitudes about menstruation

and lack knowledge about normal versus abnormal symptoms. The participant elucidates that later point, stating that she was later unable to discern whether her severe cramps were truly indicative of endometriosis (A014).

Additionally, and perhaps most predominantly, the interview participants were more likely to discuss birth control and health care in terms of their abnormal menstrual bleeding, than the focus group participants. Nearly all of the interview participants recollected their attempts to treat their abnormalities, specifically using different birth control pills. However, of those participants, some explained that they felt unprepared to choose a birth control pill due to a lack of knowledge about the different types and their individual side effects. For example, one woman attributed her lack of knowledge about birth control due to abstinence-only sexual health education:

My mom was the first one who suggested that maybe I should ask my doctor about going on birth control. But in school and everything, like all my health classes, I really can't remember learning about birth control at all. Like, I don't even think they mentioned it. Maybe in eighth grade they did. Yeah, I think in eighth grade, they started mentioning like different types of birth control. But of course, it's an abstinence-only type of sex education. So, it wasn't really covered at all. So, I didn't feel like I knew really what I was going into (A012).

Here, the participant demonstrates how her experiences learning about menstrual or sexual health in school poorly prepared her to begin treatment for her abnormalities, as her sources of information did not communicate that people may utilize birth control pills for reasons other than contraception. Later during our conversation, that participant states

that it was not until meeting her OB-GYN that she understood the various types of birth control methods and how they each regulate menstrual bleeding.

In another example, a woman who has PCOS explained the obstacles that she faced along the journey to treat her condition, stating that she attempted various types of birth control before finding one that alleviated her symptoms.

So [physicians] put you on the pill. And it did not go well. And [the physician]'s like, 'Okay, so we are not going to try the pill again.' And then, she spent an hour talking to me about all the different types of birth control that are out there, most of which I had never even heard of. And she went through each one of them, described how they work, what the procedure is for using them, what the side effects are, what the pros and cons are, especially specifically related to my body and my experience. And so, from there, she said, 'I think maybe something that would be good for you would be to try a NuvaRing.' And it's worked fantastic. I've had no issues with it whatsoever. But if it weren't for her, I wouldn't have even known about it. I wouldn't have known about all these different types of birth control that are out there and the different forms of treatment for people who have PCOS (A002).

That example further highlights that women often do not receive comprehensive menstrual education during adolescence that allows them to navigate abnormal menstrual bleeding efficiently and effectively. Rather, in both examples, the participants highlight that their OB-GYNs were the only significant sources of information. Still, poor menstrual education may have the opportunity to lessen the time between the onset of symptoms and effective treatment, a point highlighted by the latter participant's



experiences attempting birth control pills before trying the NuvaRing. That point is further elucidated by a participant who reported dysmenorrhea, or painful menstrual bleeding and provided her experience:

I definitely went to the doctor and was told to keep taking Aleve or Advil or whatever. And I got prescribed higher-than-over-the-counter dosage of Advil, but it didn't do anything. And then, I started taking some homeopathic pills, which also didn't do anything. I was supposed to take Aleve before I got my period, when I thought it would be coming, but it didn't do anything. So, I went to the gynecologist and took, I think, four or five different birth control pills before I got the one I have now, which I have like under control (A008).

That participant further discussed that her menstrual cramps were often so painful that she experienced difficulties participating in school and everyday activities, and it was not until she found an effective birth control pill that she could manage her menstrual health. However, she also revealed that she was unprepared to experience such pain, as her sources of information failed to teach her how to detect abnormal menstrual bleeding. Together, these examples demonstrate that menstrual education is inadequate, marginalizing those who may experience heavy, painful, or irregular menstrual bleeding and lacking information about how to treat those symptoms. To put it in the words of another participant, “I wasn't aware that there was a solution that I could have gotten much earlier. And I think that if I had gotten a proper education on both what's going wrong or what could be going wrong and what treatment could be sought, then I would have been in a lot less pain, I would have missed a lot less school and missed a lot fewer shifts on my job” (A010).

The interview participants often echoed that point, revealing that they desired more information about menstrual disorders during adolescence. Still, in some cases, others detailed less positive health care experiences, physicians undermining the severity of or completely dismissing their abnormalities. For example, one woman who has endometriosis explained, “Being aware of the fact that I was in a lot of pain, it was always kind of that same experience where I'd be like, ‘hey, I'm in a lot of pain,’ and then being dismissed. Like, ‘oh, well, that's just menstruation. Like you're going to be in some pain’” (A010). Here, the participant elucidates that heavy, painful, and irregular menstrual bleeding often become normalized, perhaps due to a lack of menstrual education or negative attitudes about menstruation. Because of that, I found the normalization of abnormalities to be another reason why menstrual disorders remain undiagnosed for several years. That woman further demonstrated her frustrations, stating that she often exaggerated her menstrual cramps in order to persuade her OB-GYN to seriously assess her symptoms. Another participant who experiences amenorrhea, or irregular menstrual bleeding, confirmed that point and stated, “When I had mentioned that, [the OB-GYN] just kind of brushed it off. He was like, ‘oh, that's normal. That's what a lot of people experience.’ And I didn't really feel comfortable afterward sharing information with other health care providers” (A006). Thus, one implication of such normalization is that women hide their abnormalities due to the fear that they will not receive proper health care assistance.

Although a number of similarities—specifically, in terms of how girls learn about menstrual hygiene and health—between the focus groups and interview transcripts, the interview participants’ narratives allowed me to recognize the effects of menstrual

education on heavy, painful, and irregular menstrual bleeding. The women reported similar sources of information, including their mothers, sisters, friends, teachers, school nurses, books, and the Internet, common myths and misconceptions about menstruation that often perpetuate stigma, and general unpreparedness to manage their menstrual hygiene and health. However, the interview participants demonstrated stronger tendencies to conceal menstruation, choosing to not discuss their abnormalities with their family members or friends due to feelings of shame and embarrassment. Further, the interview participants discussed their unique experiences seeking treatment for their abnormalities, using birth control methods or consulting health care professionals. Those women provided recommendations as to how menstrual education can improve in order to better prepare others to detect and treat abnormal menstrual bleeding, possibly allowing a unique approach to improving the female reproductive health.

## CHAPTER 5

### DISCUSSION

Menstrual disorders provide a unique argument in favor of reformed menstrual education, as there exists a need to better prepare women to recognize painful, heavy, and irregular menstrual bleeding. Because menstrual disorders are often symptoms of conditions such as endometriosis and PCOS, which are conditions that may decrease fertility and quality of life, menstrual education is an essential component of female reproductive health care. Still, negative attitudes, or stigma, are significant obstacles on the path to reformed menstrual education. How does stigma influence menstrual education, and what are the implications of that influence? If menstrual education rejects stigma and prioritizes biological information about the menstrual cycle, then is that sufficient preparation?

In this chapter, I discuss some of the significant implications of this project, including perceptions of normal menstrual bleeding, the ways in which stigma exacerbates lengthy diagnostic delays, and how menstrual education provides opportunities to facilitate better access to health care and treatments. First, comparing the unique experiences of the interviewees to the general themes that the focus group participants discussed, the results of this project revealed that menstrual education shapes women's perceptions of normal menstrual bleeding. Second, the interview participants specifically demonstrated the ways in which stigma hindered their abilities to detect and treat abnormal menstrual bleeding, strengthening diagnostic delays and decreasing quality of life. Third, because menstrual education influences the ways in which women view normal versus abnormal menstrual bleeding, it has opportunities to prepare women

to better recognize and treat menstrual disorders. However, the results also demonstrated that menstrual education cannot undertake that opportunity on its own. Additionally, in this chapter, discuss a number of limitations that potentially influenced the results of this study as well as future directions.

### *Perceptions of normal menstrual bleeding*

One expected finding was that sources of information play a significant role in influencing women's perceptions of normal menstrual bleeding. Those sources – and more importantly, the quality of their information – are an integral factor of girls' preparation to manage their menstrual hygiene and health. If sources of information fail to adequately provide useful information about the menstrual cycle, then women may lack the knowledge to distinguish between normal and abnormal symptoms of menstruation. For instance, women recalled that their sources of information employed language that prepared them to expect menstruation to be a nuisance, inconvenience, and curse, among other negative perceptions. If sources of information teach that menstruation is an unfortunate occurrence that brings about discomfort and agony, then girls may believe their severe cramps to be normal. On the contrary, severe cramps may be a symptom that is indicative of treatable conditions such as endometriosis or uterine fibroids. For that reason, it is imperative that sources of information make the distinction between normal and abnormal menstrual bleeding clear.

More specifically, women recalled that their sources of information often perpetuated essentialist views about menstruation, teaching girls that they would experience similar menstrual bleeding patterns. In the words of one participant (A008),

she was unaware of “what [her] body was capable of,” demonstrating that such sources fail to convey that abnormal menstrual bleeding may occur. At the same time, sources of information also prepare girls to experience some abnormalities that are normal, obscuring the line that separates normal and abnormal menstrual bleeding. For example, some women stated that they previously viewed keeping track of their periods as inconsequential. In actuality, if girls are aware of the average menstrual cycle length and keep track of their periods, then they may be better prepared to detect irregularities. Such information is an integral component of menstrual education, teaching girls about what happens during the menstrual cycle and preparing them to manage their reproductive health. Sources of information that fail to clearly describe what normal menstrual bleeding ought to look like and how to identify abnormalities negatively impacted women who were unable to discern whether their painful, heavy, and irregular menstrual bleeding were merely underlying symptoms of other conditions.

Additionally, a more personal approach that addresses and dismisses stigmatized ideas and misconceptions about menstruation, possibly by sharing personal experiences, may strongly benefit and provide comfort to young girls. According to DeMaria et al. (2019), the stigma of menstruation exists in countless communities, influencing feelings of shame and embarrassment among those who menstruate, which are ideas that the participants echoed. In the focus groups, women articulated their desires for more positive environments that encourage conversations and questions in an effort to provide helpful knowledge that prepares girls to recognize menstrual disorders. That idea was especially prevalent among women who endure painful, heavy, and irregular menstrual bleeding. Generally, negative attitudes encourage women to conceal menstruation to

avoid feelings of shame and embarrassment. Because of that, women may be less inclined to report abnormalities, simply accepting their circumstances or even normalizing their abnormal symptoms. Thus, there is an opportunity, using destigmatization efforts, to clearly depict normal menstrual bleeding while facilitating discussions in which women feel assured that they will not be shamed because of their menstrual disorders.

### *Stigma lengthens diagnostic delays*

According to the women who participated in the interviews, those perceptions of normal menstrual bleeding significantly impacted their health. First, a majority reported several years between the onset of abnormalities and diagnosis due to the inability to differentiate between normal and abnormal menstrual bleeding. Generally, conditions such as endometriosis and PCOS are typically associated with lengthy diagnostic delays (Moradi et al., 2019), and partly, that can be due to a lack of awareness about menstrual disorders. Some women recalled long periods of time, consisting of numerous laboratory tests and countless health care professionals, before they began to directly treat their menstrual disorders or conditions. Because of that, it became evident that menstrual education is incomplete. Specifically, women recommended that sources of information prioritize how to manage abnormalities, referencing that until adulthood, they did not know whether they should seek health care assistance. Although the Internet encompasses a plethora of information, ranging from trusted medical sources to blog posts, women still expressed that mothers and teachers have the opportunity to provide foundational knowledge that may allow them to better recognize anomalies.

Specifically, poor communication was determined to be one of the most common obstacles that stalled women's paths to improved menstrual health. Strained relationships between physicians and their patients partly derived from the lack of knowledge of menstrual disorders. For example, some women reported that they were unaware of the types of questions that they ought to ask their physicians in order to obtain necessary information about their health. Those women often attributed that point to their sources of information, which poorly prepared them to deal with those unfortunate circumstances, delaying their diagnoses and hampering access to treatments.

*Opportunities to facilitate better access to health care and treatments*

However, it became apparent, especially during the interviews, that even among women who were knowledgeable about menstrual disorders, several obstacles to adequate health care exist. Those women who endure painful, heavy, or irregular menstrual bleeding stated that at times, they had to, in the words of one participant (A001), "prove something." That is, health care professionals may downplay the severity of menstrual disorders, confirming the stereotype of "menstrual moaners," articulated by Heather Guidone (Guidone, 2020). A surprising finding was that the stigma of menstruation also existed outside girls' homes and schools, extending to even the most dependable clinical settings. As one participant (A007) put it, women expected their gynecologists to have answers for them, but many of those women sought out the help of several different physicians, some reporting to no avail. Although health care professionals' knowledge of normal menstrual bleeding is beyond the scope of this project, it should be noted that several women demonstrated that if their health care



professionals disregarded menstrual disorders, then they were further inclined to normalize their abnormalities.

Additionally, few women who reported more positive experiences confirmed that point. Specifically, women who referenced particularly supportive family members and friends claimed that their later experiences, obtaining health care for their abnormalities, were opportune. For instance, one participant recalled that her mother encouraged discussions and questions about menstruation, allowing her to feel comfortable and prepared to manage her menstrual hygiene and health. She even recalled that following her menarche, her mother treated her to Starbucks, creating a sense of normalcy about menstruation. For that reason, the participant noted that she rarely felt uncomfortable purchasing sanitary pads or asking questions about birth control. Those positive experiences benefitted her later, when she began to suffer severe cramps, citing that she immediately inquired about birth control pills as potential options to remedy her abnormalities. Although that is only one participant among several others who reported vastly different experiences, it demonstrates that it may be possible to facilitate better access to adequate health care and treatments through de-stigmatization efforts.

In particular, common treatments that women desired more knowledge about were methods of birth control for the purpose of controlling their menstrual cycles. According to the Guttmacher Institute, fifty-eight percent of women use various birth control methods for reasons other than contraception, including treatments for menstrual disorders (Jones, 2011). Despite that statistic, birth control is a topic that, according to women who participated in the focus groups and interviews, collectively, sources of information often neglect. Thus, mothers, sisters, teachers, and school nurses, among

other sources, have an opportunity to provide potentially transformative knowledge about birth control. Even if women are aware that birth control methods not only act as contraceptives but also alleviate severe cramps and regulate menstrual cycles, then they would be more prepared to seek treatments for their abnormalities.

But once again, several interviewees demonstrated the variability of that point. Even participants who desired birth control pills, patches, intrauterine devices as treatments found it difficult to determine the best one, if their physicians were unwilling to explain the ways in which each method would affect individuals' bodies. One participant referenced experimenting with "different concoctions" of synthetic hormones, which took a significant toll on her physical, emotional, and mental well-being (Focus Group #4). Similarly, other participants who attempted numerous birth control methods, before finding one that accommodated their bodies, stated that they desired physicians who carefully and thoroughly explained each method. Overall, one unexpected finding that emerged out of the focus groups and interviews was that women who have positive experiences or comprehensive education still face obstacles. The significance of this finding is that on its own, reformed menstrual education cannot absolutely solve the lack of recognition to menstrual disorders.

### Limitations

There are several limitations of this project that may impact the results. First, this study is not a proper longitudinal study in that I did not observe the women's experiences over time, from preadolescence to adulthood. Rather, I asked the women to retrospectively recall their experiences learning about menstruation. This research design

may be limited, as there is a strong possibility that the women did not provide perfect recollections of their experiences. However, it must be noted that menarche is a highly salient experience, girls often citing their first periods as an important event during their lifetimes. Psychologists Jeanne Brooks-Gunn and Anne C. Petersen iterate that point in their book *Girls at Puberty: Biological and Psychosocial Perspectives*, stating that the emphasis on menarche as a transition into womanhood cause girls to strongly recall the event (Brooks-Gunn and Petersen, 1983).

Second, the characteristics of the sample are limited. For example, a majority of the focus groups and interviews included women who received their menstrual education in Arizona, so the results of this project may not represent the experiences of others. Because puberty education materials vary widely throughout the US, girls may learn different information about menstrual hygiene and health, depending on the state that they live in. Similarly, this project included only cisgender women. For that reason, this project does not encompass the experiences of every person that menstruates. However, the experiences of transgender people who menstruate may be significantly unique to that group and thus are beyond the scope of this project. To fully understand the ways in which the experiences of cis-gender women differ from others who menstruate, a project would need to include a significant number of transgender people who menstruate and control for different gender identities.

### *Future directions*

This project demonstrates the ways in which menstrual education can shape girls' perceptions of normal versus abnormal menstrual bleeding, affecting their abilities to

detect and treat menstrual disorders. Additionally, the results of the focus groups and interviews showed that women face several obstacles in health care settings that further affect the ways in which they perceive abnormal menstrual bleeding. To develop a more comprehensive understanding of the ways in which abnormal menstrual bleeding is recognized and treated, it would be beneficial to talk to health care professionals about their perspectives.

Health care professionals' views about abnormal menstrual bleeding can provide meaningful insight about who has access to treatments and technologies that they utilize to treat the symptoms of conditions such as endometriosis and PCOS. In addition to abnormal menstrual bleeding, infertility is a primary symptom of those conditions. So, it is possible that a lack of attention to those conditions, shaped by the stigma of and attitudes toward menstruation, not only decrease quality of life but also compromise reproductive autonomy. For that reason, an assessment of health care professionals' attitudes may elucidate gaps in the treatment of those conditions and be used to promote reproductive potential among women who are infertile. An assessment of girls' experiences learning about menstruation, as well as the ways in which health care professionals provide support to treat menstrual disorders, can provide meaningful insight into how conversations about menstruation develop in different environments that help shape women's abilities to treat abnormalities.

## CHAPTER 6

### CONCLUSION

This aim of this project was to evaluate what and how girls learn about menstruation during preadolescence as well as the ways in which that knowledge influences whether girls are able to detect and treat menstrual disorders. As endometriosis and PCOS are often associated with diagnostic delays, this project sought to determine the extent to which menstrual education impacts awareness of those conditions.

Endometriosis and PCOS may cause a decreased quality of life. For example, the painful menstrual bleeding of endometriosis often causes girls to skip school or women to miss work. Similarly, the irregular menstrual bleeding of PCOS may lead to compromised fertility. And a lack of awareness can exacerbate those complications. Menstrual education often limits access to accurate biological information about the menstrual cycle, hindering girls' abilities to detect abnormal menstrual bleeding. Negative attitudes, stigmatized ideas, and misconceptions about menstruation influence feelings of shame, encouraging girls to hide abnormalities. I refer to this as "normalizing the abnormal." That is because inaccurate information, shaped by misconceptions, often obscures girls' perceptions of normal menstrual bleeding.

Recent studies and advocacy efforts have demonstrated the importance of destigmatizing menstrual education. In 2020, undergraduate students Anna D. Li and Emily K. Bellis published the article "Unmet Needs and Experiences of Adolescent Girls with Heavy Menstrual Bleeding and Dysmenorrhea: A Qualitative Study," alongside a group of researchers in Melbourne, Australia. The research team evaluated a set of needs among a group of young girls who experience heavy and painful menstrual bleeding, finding that

information about how to detect abnormal menstrual bleeding was one of the top priorities. They further recommend that menstrual education ought to include stigma reduction efforts that encourage girls to feel comfortable about menstruation. The research team states that when girls learn that menstruation is not shameful, they are more likely to seek treatment for abnormal menstrual bleeding (Li et al., 2020). That point is further confirmed by the focus group and interview participants. Because of its influence on girls' perceptions of normal menstrual bleeding and abilities to detect abnormalities, menstrual education is a significant experience that provides transformative knowledge. Thus, efforts to de-stigmatize information about menstruation can allow menstrual disorders to be more widely recognized, diagnosed, and treated.

## REFERENCES

- Agnew, S., & Gunn, A. C. (2019). Students' engagement with alternative discursive construction of menstruation. *Health Education Journal*, 78(6), 670–80. <https://doi.org/10.1177/0017896919835862>
- Agnew, S., & Sandretto, S. (2016). A case for critical literacy analysis of the advertising texts of menstruation: Responding to missed opportunities. *Gender and Education*, 28(4), 510–26. <https://doi.org/10.1080/09540253.2015.1114073>
- American College of Obstetricians and Gynecologists (2021). *Endometriosis*. American College of Obstetricians and Gynecologists. <https://www.acog.org/womens-health/faqs/endometriosis>
- American College of Obstetricians and Gynecologists. (2017). Committee Opinion No. 702 Summary: Female Athlete Triad. *Obstetrics & Gynecology*, 129(6), 1151–2. <https://doi.org/10.1097/AOG.0000000000002109>
- American College of Obstetricians and Gynecologists. (2018). Polycystic Ovary Syndrome: ACOG Practice Bulletin, Number 194. *Obstetrics & Gynecology*, 131(6), e157–71. <https://doi.org/10.1097/AOG.0000000000002656>
- Bennett, C., & Harden, J. (2014). An Exploration of Mothers' Attitudes towards Their Daughters' Menarche. *Sex Education: Sexuality, Society and Learning*, 14(4), 457–70. <http://dx.doi.org.ezproxy1.lib.asu.edu/10.1080/14681811.2014.922862>
- Berlatsky, N. (2016, November 3). *Carrie at 40: why the horror genre remains important for women*. The Guardian. <https://www.theguardian.com/film/2016/nov/03/carrie-stephen-king-brian-de-palma-horror-films-feminism>
- Borunda, A. (2019, September 6). *How tampons and pads became so unsustainable*. National Geographic. <https://www.nationalgeographic.com/environment/article/how-tampons-pads-became-unsustainable-story-of-plastic>
- Brooks-Gunn, J. & Petersen, A.C. (1983). *Girls at Puberty: Biological and Psychosocial Perspectives*. Springer.
- Bush, D., Brick, E., East, M. C., & Johnson, N. (2017). Endometriosis education in schools: A New Zealand model examining the impact of an education program in schools on early recognition of symptoms suggesting endometriosis. *Australian and New Zealand Journal of Obstetrics and Gynecology*, 57(4), 452–57. <https://doi.org/10.1111/ajo.12614>
- Chrisler, J. C. (2013). Teaching Taboo Topics: Menstruation, Menopause, and the Psychology of Women. *Psychology of Women Quarterly*, 37(1), 128–32. <https://doi.org/10.1177/0361684312471326>

- Chrisler, J. C., Luisa Marvan, M., Gorman, J. A., & Rossini, M. (2015). Body appreciation and attitudes toward menstruation. *Body Image, 12*, 78–81. <https://doi.org/10.1016/j.bodyim.2014.10.003>
- DeMaria, A. L., Delay, C., Sundstrom, B., Wakefield, A. L., Naoum, Z., Ramos-Ortiz, J., Meier, S., & Brig, K. (2020). “My mama told me it would happen”: Menarche and menstruation experiences across generations. *Women & Health, 60*(1), 87–98. <https://doi.org/10.1080/03630242.2019.1610827>
- Freidenfelds, L. (2009). *The Modern Period Menstruation in Twentieth-Century America*. Johns Hopkins University Press.
- Guidone, H.C. (2020). The Womb Wanders Not: Enhancing Endometriosis Education in a Culture of Menstrual Misinformation. In: Bobel C., Winkler I.T., Fahs B., Hasson K.A., Kissling E.A., Roberts T.A. (Eds). *The Palgrave Handbook of Critical Menstruation Studies*. Palgrave Macmillan. [https://doi.org/10.1007/978-981-15-0614-7\\_22](https://doi.org/10.1007/978-981-15-0614-7_22)
- Gupta, J., Cardoso, L. F., Harris, C. S., Dance, A. D., Seckin, T., Baker, N., & Ferguson, Y. O. (2018). How do adolescent girls and boys perceive symptoms suggestive of endometriosis among their peers? Findings from focus group discussions in New York City. *BMJ Open, 8*(6), 1–11. <https://doi.org/10.1136/bmjopen-2017-020657>
- Hennegan, J., Tsui, A. O., & Sommer, M. (2019). Missed Opportunities: Menstruation Matters for Family Planning. *International Perspectives on Sexual and Reproductive Health, 45*, 55–9. <https://doi.org/10.1363/45e7919>
- Hillard, P. J. A. (2014). Menstruation in Adolescents: What Do We Know? and What Do We Do with the Information? *Journal of Pediatric and Adolescent Gynecology, 27*(6), 309–19. <https://doi.org/10.1016/j.jpag.2013.12.001>
- House, S., Mahon, T., & Cavill, S. (2013). Menstrual Hygiene Matters: A resource for improving menstrual hygiene around the world. *Reproductive Health Matters, 21*(41), 257–9.
- Hurwitz, L. B., Lauricella, A. R., Hightower, B., Sroka, I., Woodruff, T. K., & Wartella, E. (2017). “When You’re a Baby You Don’t Have Puberty”: Understanding of Puberty and Human Reproduction in Late Childhood and Early Adolescence. *The Journal of Early Adolescence, 37*(7), 925–47. <https://doi.org/10.1177/02724316166642323>
- Hurwitz, L. B., Lovato, S. B., Lauricella, A. R., Woodruff, T. K., Patrick, E., & Wartella, E. (2018). “A New You, That’s Who”: An evaluation of short videos on puberty and human reproduction. *Palgrave Communications, 4*. <https://doi.org/10.1057/s41599-018-0147-z>



Jones, R.K. (2011, November). *Beyond Birth Control: The Overlooked Benefits of Oral Contraceptive Pills*. Guttmacher Institute. <https://www.guttmacher.org/report/beyond-birth-control-overlooked-benefits-oral-contraceptive-pills>

Kimberly-Clark. (1948). *Very Personally Yours*. Kimberly-Clark.

Kroshus, E., Fischer, A. N., & Nichols, J. F. (2015). Assessing the Awareness and Behaviors of US High School Nurses With Respect to the Female Athlete Triad. *Journal of School Nursing*, 31(4), 272–79. <https://doi.org/10.1177/1059840514563760>

Kroshus, E., Sherman, R. T., Thompson, R. A., Sossin, K., & Austin, S. B. (2014). Gender Differences in High School Coaches' Knowledge, Attitudes, and Communication About the Female Athlete Triad. *Eating Disorders*, 22(3), 193–208. <https://doi.org/10.1080/10640266.2013.874827>

Li, A.D., Bellis, E.K., Girling, J.E., Grover, S.R., Marino, J.L., & Peate, M. (2020). Unmet Needs and Experiences of Adolescent Girls with Heavy Menstrual Bleeding and Dysmenorrhea: A Qualitative Study. *Journal of Pediatric and Adolescent Gynecology*, 33(3), 278–84. <https://doi.org/10.1016/j.jpag.2019.11.007>

Marsh, E. E., Brocks, M. E., Ghant, M. S., Recht, H. S., & Simon, M. (2014). Prevalence and knowledge of heavy menstrual bleeding among African American women. *International Journal of Gynecology and Obstetrics: The Official Organ of the International Federation of Gynecology and Obstetrics*, 125(1), 56–9. <https://doi.org/10.1016/j.ijgo.2013.09.027>

Moradi, M., Parker, M., Sneddon, A. Lopez, V., & Ellwood, D. (2019). The Endometriosis Impact Questionnaire (EIQ): a tool to measure the long-term impact of endometriosis on different aspects of women's lives. *BMC Women's Health*. 19. <https://doi.org/10.1186/s12905-019-0762-x>

Office on Women's Health. (2019). Endometriosis. *Office on Women's Health*. <https://www.womenshealth.gov/a-z-topics/endometriosis>

Orringer, K., & Gahagan, S. (2010). Adolescent girls define menstruation: A multiethnic exploratory study. *Health Care for Women International*, 31(9), 831–47. <https://doi.org/10.1080/07399331003653782>

Rembeck, G. I., & Gunnarsson, R. K. (2004). Improving pre- and post-menarcheal 12-year-old girls' attitudes toward menstruation. *Health Care for Women International*, 25(7), 680–98. <https://doi.org/10.1080/07399330490458033>

Santora, E. (2021). "Thesis: Socioeconomic and Cultural Ideas of Endometriosis in Low and Middle-Income Countries: A Narrative Literature Review". *Embryo Project Encyclopedia* ISSN: 1940-5030 <http://embryo.asu.edu/handle/10776/13240>

Stubbs, M. L. (2008). Cultural perceptions and practices around menarche and adolescent menstruation in the United States. *Annals of the New York Academy of Sciences*, 1135, 58–66. <https://doi.org/10.1196/annals.1429.008>

Tan, D. A., Haththotuwa, R., & Fraser, I. S. (2017). Cultural aspects and mythologies surrounding menstruation and abnormal uterine bleeding. *Best Practice & Research Clinical Obstetrics & Gynecology*, 40, 121–33. <https://doi.org/10.1016/j.bpobgyn.2016.09.015>

Valliant, M. W. (2016). The Female Athlete Triad and Relative Energy Deficiency in Sport: Knowledge of Both Can Improve the Health of Female Athletes. *Strength & Conditioning Journal*, 38(2), 35–9. <https://doi.org/10.1519/SSC.0000000000000201>

APPENDIX A  
FOCUS GROUP PROTOCOL

Hello and welcome, everyone. I want to thank you all for your participation in this focus group in which we will discuss your experiences with menstrual education. Before we begin, I want to remind everyone of a few procedures. First of all, the audio of this focus group will be recorded and later transcribed. After the audio is transcribed, it will be deleted. To preserve confidentiality as much as possible, please refrain from using your name or names of others during this focus group. Any identifying information will not be used in the study and deleted from the transcription. A unique ID will be assigned to each participant as an identifier during data analysis in order to ensure confidentiality. However, complete confidentiality cannot be guaranteed, as we are in a group setting where other people are aware of your attendance. Also, your participation in this study is voluntary, so you reserve the right to skip any question or leave the focus group at any time.

### Ice Breaker

1. What is your dream job?

### First Experience with Menstrual Education

**Prompt:** First, I will ask about your initial experiences learning about menstruation.

1. How old were you when you first learned about menstruation?
2. Did you first learn about menstruation before or after your first period?
3. Who first taught you about menstruation?

### Experience with Menstrual Education at Home

1. Who first taught you about menstruation at home or outside of school? (probe: mom, sister, friend, etc.)
2. How old were you during that time?
3. What do you remember about the circumstances of that experience?
4. Can you describe what you learned about menstruation at that age?
5. What topics regarding menstruation do you feel were missing from that initial lesson?
6. As you grew older, did you receive follow-up lessons outside of school regarding menstruation?

*Experience with Menstrual Education in School*

**Prompt:** Now, I will ask a few questions about your experiences learning about menstruation in school.

1. How old were you when you first learned about menstruation in school?
2. Who taught you about menstruation in school? (probe: teacher, school nurse, physical education teacher, etc.)
3. What information did you learn about menstruation in school?
4. After that first experience learning about menstruation in school, did you receive follow-up lessons that provided you with more information about the topic?

*Experience with Menstrual Health Management*

**Prompt:** Lastly, I will ask a few questions about your experiences managing your menstrual cycles.

1. Did you feel like your experiences learning about menstruation adequately prepared you for managing your menstrual cycles?
2. What were challenges that you faced learning to manage your menstrual cycle?
3. Based off of what you have learned about menstruation, do you feel like you would be able to tell the difference between normal and abnormal symptoms of menstruation?
4. Have you ever experienced menstrual symptoms that were abnormal or that you thought might be abnormal? (probe: What were the symptoms? What did you do about them?)
5. What is your experience with abnormal symptoms of menstruation or menstrual disorders? (probe: family or friends with menstrual disorders like endometriosis, PCOS, or amenorrhea)
6. Is there anything that we have not discussed that you would like to mention as it pertains to menstruation or education?

This concludes the focus group. Thank you, everyone, for your participation in this focus group. As a reminder, the audio recording will be transcribed and later deleted. The data collected from the transcription will be used to distinguish where menstrual education is lacking. Also, I am conducting one-on-one interviews with women with menstrual disorders, like endometriosis or amenorrhea, to further evaluate how menstrual education affects reproductive health outcomes. If anyone has experience with menstrual disorders and is interested in setting up an interview, then please contact me for further details.

APPENDIX B  
SEMI-STRUCTURED INTERVIEW PROTOCOL

Hello, and thank you for your participation in this interview. Today, we will discuss your experience with menstrual education and how that has affected your menstrual health. Before we begin, I want to remind you of a few procedures. First of all, the audio of this Zoom interview will be recorded and later transcribed. After the audio is transcribed, it will be deleted. To preserve confidentiality as much as possible, please refrain from using your name or names of others during this interview. Any identifying information will not be used in the study and deleted from the transcription. You will be assigned a unique ID as an identifier in order to ensure confidentiality. Also, your participation in this study is voluntary, and you reserve the right to skip any question or end the interview at any time.

### Ice Breaker

1. What is your dream job?

### First Experience with Menstrual Education

**Prompt:** First, I will ask about your initial experiences learning about menstruation.

1. How old were you when you first learned about menstruation?
2. Did you first learn about menstruation before or after your first period?
3. Who first taught you about menstruation?

### Experience with Menstrual Education at Home

1. Who first taught you about menstruation at home or outside of school? (probe: mom, sister, friend, etc.)



2. How old were you during that time?
3. What do you remember about the circumstances of that experience?
4. Can you describe what you learned about menstruation at that age?
5. What topics regarding menstruation do you feel were missing from that initial lesson?
6. As you grew older, did you receive follow-up lessons outside of school regarding menstruation?

### *Experience with Menstrual Education in School*

**Prompt:** Now, I will ask a few questions about your experiences learning about menstruation in school.

1. How old were you when you first learned about menstruation in school?
2. Who taught you about menstruation in school? (probe: teacher, school nurse, physical education teacher, etc.)
3. What information did you learn about menstruation in school?
4. After that first experience learning about menstruation in school, did you receive follow-up lessons that provided you with more information about the topic?

### *Experience with Menstrual Health Management*

**Prompt:** Lastly, I will ask a few questions about your experiences managing your menstrual cycles.

1. Did you feel like your experiences learning about menstruation adequately prepared you for managing your menstrual cycles?
2. What were challenges that you faced learning to manage your menstrual cycle?

3. Based off of what you have learned about menstruation, do you feel like you would be able to tell the difference between normal and abnormal symptoms of menstruation?
4. Have you ever experienced menstrual symptoms that were abnormal or that you thought might be abnormal? (probe: What were the symptoms? What did you do about them?)
5. What is your experience with abnormal symptoms of menstruation or menstrual disorders? (probe: family or friends with menstrual disorders like endometriosis, PCOS, or amenorrhea)
6. Is there anything that we have not discussed that you would like to mention as it pertains to menstruation or education?

#### *Experience with Obtaining Health Care*

**Prompt:** Lastly, I will ask a few questions about your experience obtaining care for your menstrual problems.

1. How long, starting from the onset of symptoms, did it take for you to receive a diagnosis for your menstrual problems?
2. Can you describe your journey to obtaining a diagnosis? (probe: health care professionals' attitudes toward symptoms, what was the final diagnosis (endometriosis, PCOS, female athlete triad/amenorrhea)?)
3. Do you feel like your experiences learning about menstruation help to prepare you for your menstrual problems?

4. How do you feel like menstrual education can be improved to prepare other girls for the possibility of developing menstrual problems?
5. Is there anything that we have not discussed that you would like to mention as it pertains to menstrual education?

This concludes the interview. Thank you for your participation. As a reminder, the audio recording will be transcribed and later deleted. Also, the data collected from the transcription will be used to evaluate how menstrual education affects reproductive health outcomes.

APPENDIX C  
CODEBOOK

1. Mnemonic: Mom

**Short Description:** Mom

**Detailed Description:** The dissemination of knowledge about the menstrual cycle and menstrual hygiene to girls from their mothers.

**Inclusion Criteria:** Mom, mother, step-mom.

**Exclusion Criteria:** Other family members that are not moms or mother figures, as well as friends, teachers, and school nurses.

**Typical Exemplars:** “I think the first time I really heard about it was when I was going on a school trip and my mom just talked to me and wanted to make sure I had stuff just in case things happened.” (Focus Group #1)

**Atypical Exemplars:** “I don't really remember if my mom, like, read me anything, I think she just kind of told me, like, you know, this is going to happen in the next couple of years.” (Focus Group #1)

**Close But No:** “So my mom and I, when she was teaching me about it, read the like American Girl *Care and Keeping of You* book, and she made me read it with her like cover to cover as nightly reading.” (Focus Group #1)

2. Mnemonic: Friend

**Short Description:** Friend

**Detailed Description:** The sharing of knowledge about the menstrual cycle and menstrual hygiene between girls and friends.

**Inclusion Criteria:** Friends and peers at school.

**Exclusion Criteria:** Family members, teachers, and school nurses.

**Typical Exemplars:** “I think I was probably 10 or 11. I think I just heard friends talking about [periods].” (Focus Group #2)

**Atypical Exemplars:** “I agree that most of my knowledge base would be what's normal for me and I would have this hard time helping like my friends if they brought up a problem.” (Focus Group #2)

**Close But No:** “I also think one of the biggest challenges was like talking about it with my friends. And like all of us realizing that it's totally normal.” (Focus Group #2)

### 3. Mnemonic: Family

**Short Description:** Family Members

**Detailed Description:** The dissemination of knowledge about the menstrual cycle and menstrual hygiene to girls from their immediate or extended family members.

**Inclusion Criteria:** Dads, aunts, sisters, cousins, or other family members

**Exclusion Criteria:** Moms or mother figures, as well as friends, teachers, and school nurses.

**Typical Exemplars:** “My mom wasn’t very specific about it, so then my aunt who's a nurse, actually, when I had my first period, she came and told me about it.” (Focus Group #3)

**Atypical Exemplars:** “I think seeing my sister go through like abnormal periods kind of helped me see like what was normal and what wasn’t.” (Focus Group #2)

**Close But No:** “My sister - we always make fun of each other for different things, so when I got my period, she was like making fun of me, but in a joking way.” (Focus Group #3)

#### 4. Mnemonic: Video

**Short Description:** Puberty Education Video

**Detailed Description:** Educational videos that are shown in a school environment to teach girls about puberty and the menstrual cycle.

**Inclusion Criteria:** Puberty education videos shown in schools to demonstrate what happens during the menstrual cycle.

**Exclusion Criteria:** Reproductive health videos on YouTube, blogs, or social media.

**Typical Exemplars:** “We didn't really have a health curriculum at my school, it was like one of those really cheesy old 90s videos, where like the kids are like acting it out or whatever. It was like sixth grade. They took us to the cafeteria and it's like, oh, here's this video.” (Focus Group #3)

**Atypical Exemplars:** “I was in sixth grade is a really cheesy late-90s video, where there was a guy and a girl like talking about like their relationship. And then when I was like, oh, do you want to have sex or something? And then it's like, wait, stop! And then they went into, like, this whole conversation about like sexual health.” (Focus Group #3)

**Close But No:** “I would say Mama Doctor Jones who is a YouTuber. She’s an Ob/Gyn. She makes videos about like everything related to that field. So that's been really helpful as well. So those two things. ” (Focus Group #3)

#### 5. Mnemonic: Teacher

**Short Description:** Teacher

**Detailed Description:** The dissemination of knowledge about the menstrual cycle and menstrual hygiene to girls from their teachers.

**Inclusion Criteria:** School teachers of any grade or subject who teach girls about the menstrual cycle and menstrual hygiene.

**Exclusion Criteria:** Other school faculty, like nurses, or teachers that do not work for the school who teach girls about the menstrual cycle and menstrual hygiene.

**Typical Exemplars:** “I learned that I had hypothalamic amenorrhea. And it was from my anatomy teacher that I found out that that's not normal.” (Focus Group #4)

**Atypical Exemplars:** “And so they brought us over to a center that wasn't even like part of the school, it was like separate, for them to teach us. Like none of our teachers taught us anything.” (Focus Group #4)

**Close But No:** “It was the lady of the facility. I wasn't sure which she was certified in.” (Focus Group #4)

#### 7. Mnemonic: Nurse

**Short Description:** Nurse

**Detailed Description:** The dissemination of knowledge about the menstrual cycle and menstrual hygiene to girls from nurses in a school environment.

**Inclusion Criteria:** Nurses or other health care professionals who work at schools.

**Exclusion Criteria:** Health care professionals, like primary care physicians and Ob/Gyns, who do not work at schools.



**Typical Exemplars:** “They separated all the boys and girls, and they had all the female teachers, including the school nurse, talk to the girls and they had some boy teachers talk to the boys about puberty stuff.” (Focus Group #2)

**Atypical Exemplars:** “In middle school. I went to a really small school so they called in a nurse from like from somewhere else. And she came and talk to us for a little while.” (Focus Group #2)

**Close But No:** “So I've had I've had a few times where I've had to go to like a gynecologist or Ob/Gyn and just be like, I have just one question.” (Focus Group #3)

#### 8. Mnemonic: Internet

**Short Description:** Internet

**Detailed Description:** Instances in which girls search for information about the menstrual cycle and menstrual hygiene on the Internet.

**Inclusion Criteria:** Any online resource, medical resources, YouTube, bloggers, and social media.

**Exclusion Criteria:** Resources that are print or not found online, as well as moms, family members, teachers, and school nurses.

**Typical Exemplars:** “I learned how to use a period cup completely from the Internet.” (Focus Group #1)

**Atypical Exemplars:** “Like YouTubers I watch, who talk about it sometimes, and I'd say I appreciate that because I haven't had to deal with it.” (Focus Group #2)

**Close But No:** “I just learned about it through the school video puberty stuff.” (Focus Group #1)

9. Mnemonic: Book

**Short Description:** Book

**Detailed Description:** Instances in which girls search for information about the menstrual cycle and menstrual hygiene in books.

**Inclusion Criteria:** Resources that are print.

**Exclusion Criteria:** Resources that are found online, as well as moms, family members, teachers, and school nurses.

**Typical Exemplars:** “I wanna say I was about 10 when I first learned about it, and I was reading about it in a book about women's health that was designed for kids my age.”

(Focus Group #2)

**Atypical Exemplars:** “I remember having my American Girl guide to growing up, or whatever, and going through it, being like, OK, this is not this is not comprehensive enough.” (Focus Group #3)

**Close But No:** “For me is probably my mom and she had like a book that was designed for kids or young like for girls to learn about.” (Focus Group #2)

10. Mnemonic: Misinformation

**Short Description:** Spread of Misinformation

**Detailed Description:** Information about the menstrual cycle and menstrual hygiene that is not true or biologically factual.

**Inclusion Criteria:** Information about the menstrual cycle that is not biologically accurate and misconceptions about menstrual hygiene.

**Exclusion Criteria:** Information about the menstrual cycle and menstrual hygiene that is not completely sufficient.

**Typical Exemplars:** “I was told that when you swim your period just stops... like while you're swimming... and so you don't have to like wear anything while you're swimming. Very quickly found out that was not true. My mom just didn't know (laughs). So probably like fact check a few more things.” (Focus Group #2)

**Atypical Exemplars:** “Having my period wasn't an excuse to be irritable or sad... and that's what my mom told me.” (Focus Group #4)

**Close But No:** “I think, like, there were parts of like my like health education that maybe were like lacking.” (Focus Group #3)

### *11. Mnemonic: Hygiene*

**Short Description:** Menstrual Hygiene Management

**Detailed Description:** Information about practices that pertain to maintaining hygiene during menstruation.

**Inclusion Criteria:** Pads menstrual cups, bathrooms, and cleanliness during menstruation.

**Exclusion Criteria:** Tampons, birth control and symptoms of PMS.

**Typical Exemplars:** “So when I was taught how to use a pad, it was like the day of my period... and they literally just got like a pair of underwear and then put a pad on and it's like, oh, this is how you're going to wear it.” (Focus Group #3)

**Atypical Exemplars:** “Oh, they never taught me anything about like hygiene products like this is a pad or tampon or anything else. It was pretty strictly focused on biology.”

(Focus Group #2)

**Close But No:** “I wish I knew more about all the other things that happen while you're on your period, like hormonal mood swings, acne... I don't know. Like feeling bloated.”

(Focus Group #3)

## *12. Mnemonic: Biological Description*

**Short Description:** Biological Description of the Menstrual Cycle

**Detailed Description:** Information about the physiological processes inside of the female body during the menstrual cycle.

**Inclusion Criteria:** Information about ovulation, menstruation, hormones involved in the menstrual cycle, fertility, and pregnancy.

**Exclusion Criteria:** Menstrual hygiene management or symptoms of PMS.

**Typical Exemplars:** “I only recently learned what ovulation was, and I feel like that's really important. If you're going to have period education, you should learn what the entire cycle is and what the purpose is, not just the period itself and that it happens on a monthly basis.” (Focus Group #3)

**Atypical Exemplars:** “I think it would have been nice to have more education on like the hormones involved and like the biological reasons for why things are happening. Um and like I would have wanted to know that.” (Focus Group #2)

**Close But No:** “Nobody ever told me about, like, the things that come with having your period, like cramps, mood swings, just feeling like angry at literally everything and anyone, getting emotional.” (Focus Group #3)

### *13. Mnemonic: Tampons*

**Short Description:** Tampons

**Detailed Description:** Knowledge of and attitudes toward the use of tampons to maintain hygiene during menstruation.

**Inclusion Criteria:** How to use tampons or misconceptions related to the use of tampons.

**Exclusion Criteria:** Pads, menstrual cups, birth control.

**Typical Exemplars:** “I think that they remark like a lot is the use of tampons, like in Mexico, where I was like really in the south, most of the women had the idea that if you use a tampon, you will take away the virginity. So everybody was against the use of tampon. And that's the thing to keep reminding me all the time, not to buy them.” (Focus Group #5)

**Atypical Exemplars:** “But then when I did get my period, like, my mom was very helpful and, like, taught me how to use a pad and taught me how to put in a tampon because like she said, like I was a dancer.” (Focus Group #3)

**Close But No:** “I also knew about like pads and tampons and that typically girls start with pads and move on. And I knew all of that before my first period.” (Focus Group #5)

### *14. Mnemonic: Cramps*

**Short Description:** Menstrual Cramps

**Detailed Description:** Knowledge of menstrual cramps or pelvic pain during menstruation.

**Inclusion Criteria:** Normal pain related to the menstrual cycle.

**Exclusion Criteria:** Abnormal pain that may be indicative of menstrual disorders, like endometriosis and PCOS.

**Typical Exemplars:** “The only thing I distinctly remember hearing was cramps and the nurse was trying to describe the feeling of... this pain like in your stomach, well like lower, but that's what she's trying to describe.” (Focus Group #2)

**Atypical Exemplars:** “I think, like pain control wasn't really discussed, so if I was in class and I know some of my friends had the same experience and you would suddenly get like a really bad case of cramps where it was hard to focus, nobody really talked about just taking an Advil or something for it. It seemed like cramps were something where you just sort of deal with it and it would go away.” (Focus Group #1)

**Close But No:** “A year or two after I got my period, just because my cramps were disgustingly terrible and like I thought I had cysts and all this stuff.” (Focus Group #4)

#### *15. Mnemonic: Emotions*

**Short Description:** Emotions

**Detailed Description:** Mention of and attitudes toward changing emotions and mental health during the menstrual cycle.

**Inclusion Criteria:** Emotional responses to menarche or emotional and mental health changes during the menstrual cycle.

**Exclusion Criteria:** Hormones related to the menstrual cycle, symptoms of PMS, and birth control.

**Typical Exemplars:** “It would have just been nice if there was more emphasis on like it's not just bleeding, like it really does affect your whole body and your mind. So I think it would have been nice to learn, you know, just simple ways to manage, like how emotional it can be for some people and that, you know, there's not something wrong with you.” (Focus Group #1)

**Atypical Exemplars:** “Especially with like concerning the fact that I have issues with mental health, things just like spiral out of control sometimes. So then it would have been nice if someone told you, oh, hey, you're not you're not crazy. You're just, you know, you're just a little extra emotional because the emotional imbalances.” (Focus Group #3)

**Close But No:** “I kind of wish someone had told me about PMS-ing and like hormone fluctuations, because I always thought like I was kind of more emotional than a lot of other people, because I got my period before a lot of people in my class.” (Focus Group #1)

## *16. Mnemonic: Tracking*

**Short Description:** Tracking Menstrual Cycles

**Detailed Description:** The practice of keeping note of the dates that a girl menstruates, approximately once a month, as well as her symptoms.

**Inclusion Criteria:** Tracking apps and calendars.

**Exclusion Criteria:** General information about the menstrual cycle, as well as fertility and pregnancy.

**Typical Exemplars:** “I went to a Catholic high school, and so they talked about like natural family planning as like a... birth control option, which is funny to look back on now. But so they talked about like tracking your period and when you're fertile and when you're not, in the context of not getting pregnant.” (Focus Group #1)

**Atypical Exemplars:** “I never track my period. That's one of the things that I just don't care for it much. It happens, it happens.” (Interview A004)

**Close But No:** “So I wish, you know, there could have been a little more information given on taking care of yourself and how important that is to your fertility and your period.” (Focus Group #1)

### *17. Mnemonic: Birth Control*

**Short Description:** Birth Control

**Detailed Description:** Knowledge of and experience with different types of technologies that mitigate the onset of ovulation and menstruation, for the purpose of pregnancy prevention or menstrual suppression.

**Inclusion Criteria:** Hormonal contraceptive medications or therapies, as well as long acting reversible contraceptives used to suppress menstruation or treat symptoms of menstrual disorders.

**Exclusion Criteria:** Menstrual hygiene management.

**Typical Exemplars:** “I would say another thing, in terms of how to manage it, is learning about birth control options and how that can help, because for me, since then,



I've been on birth control pill for almost three years now. And that significantly has helped with my periods.” (Focus Group #1)

**Atypical Exemplars:** “But even now, I have the birth control implant. It actually made my periods more irregular. So I'm kind of going through the same struggle again, like there are benefits. It made it lighter, but it did make it more irregular. So I'm like learning to deal with that now too.” (Focus Group #3)

**Close But No:** “Other ways to manage your period besides pads and tampons. Definitely. I certainly wasn't learning about how to use like a menstrual cup at age 10, you know, so.” (Focus Group #1)

#### 18. Mnemonic: Menstrual Disorders

**Short Description:** Knowledge of Menstrual Disorders

**Detailed Description:** The ability to distinguish between normal and abnormal symptoms of menstruation, which may be indicative of conditions like endometriosis or PCOS, in menstrual education.

**Inclusion Criteria:** Endometriosis, PCOS, amenorrhea, or dysmenorrhea.

**Exclusion Criteria:** Normal menstrual cycles.

**Typical Exemplars:** “I think one of the biggest things is when people teach sex education, what I've personally noticed, is that there's always this kind of like black and white story that they paint for people. Like this is how women function, this is how they will always function. They don't teach about the different types of menstrual disorders at all.” (Interview A002)

**Atypical Exemplars:** “I really struggled with an eating disorder, and my period went away for a few years, and I didn't really think it was like a problem. I was kind of just like, that's awesome. It's like I don't have my period, nice. And I didn't realize, like, how big of a deal that is.” (Focus Group #5)

**Close But No:** “Well, I have personally not experienced, like an irregular period, but my friend has. And she's had like missing periods.” (Focus Group #4)

19. *Mnemonic: HC*

**Short Description:** Health Care Professionals

**Detailed Description:** Experience with health care professionals, in a clinical setting, in regard to treatment for menstrual disorders.

**Inclusion Criteria:** Experiences in health care setting or with health care professionals, including treatments for menstrual disorders.

**Exclusion Criteria:** School nurses or at-home remedies for menstrual disorders.

**Typical Exemplars:** “But bringing it up to my doctor, I was kind of like nervous about what he would say. But like the interaction with him, it wasn't very, wasn't very good. When I had mentioned that he just kind of like brushed it off, kind of he was like, oh, that's normal. That's what a lot of people experience. And I didn't really feel comfortable afterwards with sharing information with other health care providers.” (Interview A006)

**Atypical Exemplars:** “I have been very lucky, though, because the OBGYN that I was referred to when I was like, I think I was 16 at the time, she's been very helpful and she's awesome. I never want to get another OBGYN again, because she's like the only one that's actually been of any help.” (Interview A002)

**Close But No:** “There wasn't any videos and it wasn't an in-depth talk. It was more just people would ask questions and then the school nurse would answer.” (Focus Group #1)

20. Mnemonic: Changes

**Short Description:** Changes in Normal Menstrual Cycles

**Detailed Description:** Knowledge of or experience with physical or biological factors that change or impact the normal functioning of the menstrual cycle.

**Inclusion Criteria:** Changes in individual menstrual cycles, including abnormal bleeding patterns due to low body weight or stress, as well as changes between their peers' menstrual cycles.

**Exclusion Criteria:** Menstrual disorders, such as endometriosis, PCOS, amenorrhea, or dysmenorrhea.

**Typical Exemplars:** “I was like, I've been skipping my period the most- It's been four, five months. She said that was normal because I could have been stressed out because of the pandemic or school or whatever. And so she's like, probably a stress factor.”

(Interview A011)

**Atypical Exemplars:** “I don't really recall ever having any abnormal periods ever.”

(Focus Group #1)

**Close But No:** “I wish that they'd included more information about how irregular your period can be in the first six months to a year after you get it, just because it can be really scary or confusing whenever you first get it to not really know what to expect.” (Focus Group #1)

21. Mnemonic: Men

**Short Description:** Men

**Detailed Description:** The role of male figures in knowledge of or attitudes toward menstrual health.

**Inclusion Criteria:** Male figures, such as dads, brothers, friends, or partners, that express certain attitudes toward menstruation or have knowledge of the menstrual cycle.

**Exclusion Criteria:** Male figures, such as dads, brothers, friends, or partners, that are sources of information for girls about the menstrual cycle (*see mnemonic: family*).

**Typical Exemplars:** “I wish I also taught the boys that girls aren't like raising hormone monsters, I guess, because I feel like that's what they see. They don't see girls as like clean when they're on their period or like normal when they're on their period.” (Focus Group #1)

**Atypical Exemplars:** “And a lot of them talked about how they were frustrated that they didn't learn about that because they didn't know how to help their girlfriends that were going through it, because they just had no idea what it was.” (Focus Group #1)

**Close But No:** “And they separated us into boys and girls groups.” (Focus Group #1)

22. Mnemonic: Attitudes

**Short Description:** Attitudes Toward Menstruation

**Detailed Description:** The ways in which people think or talk about menstruation.

**Inclusion Criteria:** Thoughts or feelings about menstruation, including shame and disgust.

**Exclusion Criteria:** Feelings of comfort, awkwardness, embarrassment, or fear about menstruation.

**Typical Exemplars:** “I definitely sometimes felt that having my period was something to be ashamed of.” (Focus Group #5)

**Atypical Exemplars:** “Like, I think I just didn't care. And then when it happened like I might a little bit later too and I was like 13. And at that point I was just kind of like, Oh, that's what that is and then I just, like, read the like the box like the tampon box or whatever to like figure it out.” (Focus Group #2)

**Close But No:** “And I went into full on panic and started sobbing. So clearly I was not prepared and I definitely didn't know how to use like tampons or anything like that when the time came.” (Focus Group #1)

### 23. *Mnemonic: Comfort*

**Short Description:** Feeling Comfortable with Menstruation

**Detailed Description:** The expression of feelings of comfort with the process of menstruation or conversations about menstruation.

**Inclusion Criteria:** Feelings of comfort, awkwardness, or embarrassment about menstruation.

**Exclusion Criteria:** Feelings of fear, as well as general feelings such as shame and disgust, about menstruation.

**Typical Exemplars:** “I felt super awkward and uncomfortable. And I think I ran out when my mom tried to start talking about it. Or I just was like, I don't want to hear it.” (Focus Group #2)

**Atypical Exemplars:** “I remember like having a chill conversation with my mom about it. And she was like, yeah, this is just how it is. And I was like, Okay, cool. You know, that was pretty much it. So I always feel comfortable with it.” (Focus Group #2)

**Close But No:** “And she ended up having like cysts and things like that. And it just really never learned that that was a thing. And so I just wish, similar to what someone else just said, knowing how to support people with that more.” (Focus Group #1)

#### 24. *Mnemonic: Fear*

**Short Description:** Fearing Menstruation

**Detailed Description:** The expression of feelings of fear with the process of menstruation or conversations about menstruation.

**Inclusion Criteria:** Feelings of fear, panic, or nervousness about menstruation.

**Exclusion Criteria:** Feelings of comfort, awkwardness, or embarrassment, as well as general feelings such as shame and disgust, about menstruation.

**Typical Exemplars:** “I remember being kind of scared of periods, because like my sister had bad periods and so I thought it was all like cramps and like you would stay in bed and stuff like that.” (Focus Group #2)

**Atypical Exemplars:** “I think I was nervous for it to happen, but I knew that it was going to be inevitable at some point. So just also, like, mentally preparing myself like this conversation is happening, which means like this is going to be happening in my future.” (Focus Group #3)

**Close But No:** “But I know that when we did more sex ed, it was a little bit of fear-mongering and abstinence-only. So it was kind of, I guess, more conservative.” (Focus Group #5)

25. Mnemonic: Secrecy

**Short Description:** Secrecy Regarding Menstruation

**Detailed Description:** Instances in which girls feel like they have to conceal their menstruation or conversations about menstruation.

**Inclusion Criteria:** Hiding, concealing, or not discussing menstruation or menstrual hygiene products.

**Exclusion Criteria:** Feelings about menstruation.

**Typical Exemplars:** “And then yeah for me, be like, not wanting anyone at school to know that I'm on my periods so like trying to hide the pads or whenever I asked to go to the bathroom.” (Focus Group #2)

**Atypical Exemplars:** “I think it, it definitely needs to be something that's normalized and we shouldn't feel like we have to keep it a secret. When we're on a period or when we need to go to the bathroom or when we need to tampon or pad or something. It's part of life, people should accept it more, I think.” (Focus Group #2)

**Close But No:** “Yeah, I felt prepared for it, but I think part of that was because the people around me that were talking to me about it treated it as a very normal thing and like questions and learning about it were so normal and there was nothing strange about it.” (Focus Group #1)

26. Mnemonic: Sex

**Short Description:** Sexual Health

**Detailed Description:** Education that specifically pertains to sexually-transmitted infections or pregnancy prevention.

**Inclusion Criteria:** Education or discussions that refer to reproductive organs (not in the context of the menstrual cycle), sexual intercourse, condoms, abstinence, or sexually-transmitted infections.

**Exclusion Criteria:** Education or discussion that refer to the menstrual cycle or menstrual hygiene management.

**Typical Exemplars:** “But I know that when we did more sex ed, it was a little bit of fear-mongering and abstinence-only. So it was kind of, I guess, more conservative.” (Focus Group #5)

**Atypical Exemplars:** “It was also my mom and probably my friends, because I noticed the difference in cultures that, at least when I was in Mexico middle school, like everybody shared their experience, and they were really open when it comes to sexual education.” (Focus Group #5)

**Close But No:** “But it was kind of awkward, because you had like a bunch of guys that were trying to make fun of the situation and girls that just kind of felt awkward and it was just really uncomfortable. And no one knew what to talk about or like how to deal with the situation, because like we were like in this conservative Christian school where this is really awkward to talk about.” (Focus Group #5)

27. Mnemonic: PMS



**Short Description:** Premenstrual Syndrome

**Detailed Description:** Knowledge of or experience with the physiological changes that occur prior to the onset of menstruation.

**Inclusion Criteria:** Premenstrual syndrome (PMS) or symptoms of premenstrual syndrome, including mood swings, acne, bloating, tiredness, and hunger.

**Exclusion Criteria:** Symptoms of menstrual disorders or emotional responses that are a result of menarche or birth control.

**Typical Exemplars:** “How your period just affects other aspects of your mood and acne and PMS and kind of kind of the whole kind of gamut of it for sure.” (Focus Group #5)

**Atypical Exemplars:** “During PMS, I have very specific things I do. I become like really lazy. But I used to think, oh, I'm just lazy. This is my fault, when in fact I was just PMSing.” (Focus Group #3)

**Close But No:** “I do remember that no one really talks about that you could miss your period from, like, stress if exam times were around. And so I know that myself and other girls, sometimes we would get panicked if we missed it during stressful times, because we thought that we were infertile or some girls thought that they were pregnant, when it's completely normal to miss it sometimes it from stress.” (Focus Group #1).