

Beliefs About and Attitudes Towards Menstruation Among American Youths and Their Suggestions to Improve Early Menstrual Communication

By

Insha Pun

May, 2023

Director of Thesis: Sachiyo Shearman, PhD

Major Department: School of Communication

ABSTRACT

Menstruation is a crucial event for over half of the people in the world. Young people report being ignored, confused, stressed, embarrassed, and stigmatized during their early menstrual conversation (EMC). The strained EMC impacts menstruators' physical, psychological health, social participation, and education. Young men find it difficult to relate to women and enforce sexist attitudes. The current study examined American youth's experiences of EMC and its impact on stigmatizing beliefs and attitudes towards menstruation (BATM). The study also explored their suggestions to improve future menstrual education sessions in schools. Young adults' early menstrual conversation and attitudes toward menstruation were examined, drawing from Goffman's stigma theory.

A cross-sectional descriptive design was used to survey the attitudes and experiences of young adults (n=368) in the US. Self-administered survey questionnaires were distributed through Qualtrics. EMC was measured using a 10-item semantic differential scale. Menstrual stigma was assessed using an adapted 45-item BATM scale with five sub-scales such as annoyance, secrecy, prescription and proscription, disability, and pleasant. A linear regression analysis was performed to examine the association between EMC and their attitudes toward menstruation. The

model explained 8% variance in the annoyance sub-scale with predictors $F(8) = 3.541$, $R^2 = .081$; 21% variance in the secrecy sub-scale with predictors $F(8) = 10.949$, $R^2 = .211$; 24.7% variance in the prescription and prescription, $F(8) = 13.404$, $R^2 = .247$; and 10% variance in the pleasant sub-scale with predictors $F(8) = 4.615$, $R^2 = .101$. Participants who had their EMC with a smaller number of people older than themselves considered menstruation annoying. Those with negative emotional perception of EMC were more likely to agree that menstruation was annoying and be kept secret. Those who discussed more negative topics in their EMC, who engaged in menstrual conversation later in their life, and those who interacted with a smaller number of peers were more likely to endorse menstrual restrictions. Participants' suggestions to improve EMC in schools include having co-ed menstrual education session, with an emphasis on the biology of menstruation, and satisfying curiosities about menstrual taboos and myths. They recommend the combined use of lectures, demonstrations, and participatory activities such as games, storytelling, and use of videos, documentaries, and film clips. Thus, to start creating a positive cultural change around menstruation and reducing the stigma around it, teenagers should have positive EMC experiences. To ensure positive EMC, we recommend that menstrual topics be introduced to adolescents early, in a predictable manner, making them feel relaxed and confident, creating a space to ask and listen to the experiences of multiple same-age peers and non-peers including family members and teachers.

Beliefs About and Attitudes Towards Menstruation Among American Youths and Their
Suggestions to Improve Early Menstrual Communication

A Thesis

Presented to the Faculty of the School of Communication
East Carolina University

In Partial Fulfillment of the Requirements for the Degree
Master of Arts in Communication

By

Insha Pun

May, 2023

Director of Thesis: Sachiyo Shearman, PhD

Thesis Committee Members:

Adrienne Muldrow, PhD

Keith Richards, PhD

Shannon Powell, PhD

© Insha Pun, 2023

DEDICATION PAGE

To my Mummy, Daddy, and Dai. I grew up seeing your sincerity, discipline, and perseverance.

I'm a blend of who you all are!

ACKNOWLEDGEMENTS

I'm truly grateful to my amazing thesis chair Dr. Sachiyo Shearman for her unwavering support and guidance. Her presence as my supervisor is a solace in my thesis journey and my life in the US as an international student. Dr. Sachi, along with thesis committee member Dr. Adrienne, are my personal guardian angels. Along with them, I'm thankful to my committee members Dr. Keith Richards and Dr. Shannon Powell, for their instrumental role in the process. Their feedback and recommendations were invaluable in shaping my work. I would also like to thank Dr. Brian Massey, Dr Glenn Hubbard in the school of communication, Aavya Silwal, my little cousin, and my dear friend Jacob Sieg for being my emotional sunshine on this journey. I'm thankful to my friend Stalin Rosero, he helps me grow at the human level.

I extend my acknowledgment to the faculty and staff of the College of Fine Arts and Communication (CFAC) for providing me with required resources and contact points. I truly acknowledge the time and input of the students from CFAC who participated in the study. Lastly and most importantly, I'm grateful to my partner Madan Subedi for his warm energy, he absorbs all my emotions gracefully, every day and loves me back sincerely.

TABLE OF CONTENTS

LIST OF TABLES	vi
LIST OF FIGURES	vii
LIST OF ABBREVIATIONS.....	viii
CHAPTER I: INTRODUCTION.....	1
Menstruation	1
Early Menstrual Communication (EMC)	6
Youth’s Beliefs About and Attitude Towards Menstruation (BATM).....	11
Significance of the Study	12
Theoretical Framework: Goffman’s Stigma Theory	14
Conceptual Framework.....	19
Research Questions and Hypothesis.....	20
CHAPTER II: METHODS.....	23
Participants.....	23
Procedure	23
Measures	24
Data Analysis Procedure.....	27
CHAPTER III: RESULT.....	28
EMC- Age, Grade level, Location, and Persons	28
EMC- Major Topics of Discussion.....	32
EMC Experiences- Cognitive and Emotional Perception.....	34
Beliefs About and Attitudes Towards Menstruation (BATM)	36
Predictors of BATM	38
Suggestions for Future Menstrual Education Session	48
CHAPTER IV: DISCUSSION	57
Limitations and Recommendations	61
Conclusion	63
REFERENCES	65
APPENDIX A: UMCIRB APPROVAL	81
APPENDIX B: SURVEY QUESTIONS	82

LIST OF TABLES

Table 1	Individuals that participants had their EMC with.....	31
Table 2	Topics that American youths talked about in their EMC.....	33
Table 3	Participant’s cognitive perception of EMC.....	35
Table 4	Participant’s emotional perception of EMC.....	35
Table 5	Beliefs About and Attitudes Towards Menstruation (BATM).....	37
Table 6	BATM among male and female American students.....	38
Table 7	Correlation between dependent and independent variables.....	41
Table 8	Multiple regression analysis I.....	44
Table 9	Multiple regression analysis II.....	46
Table 10	Youth’s recommendation for the audience in the menstrual session.....	48
Table 11	Youth’s recommendation for the facilitator in the menstrual session.....	49
Table 12	Youth’s recommendation for the location in the menstrual session.....	50
Table 13	Youth’s recommendation for the topics to be covered in the session.....	51
Table 14	Youth’s recommendation for topics to emphasize in the session.....	52
Table 15	Youth’s recommendation for media type in the menstrual session.....	53
Table 16	Youth’s recommendation for the delivery method in the menstrual session.....	54
Table 17	Youth’s recommendation for duration of the menstrual session.....	55

LIST OF FIGURES

Figure 1 A conceptual model describing factors that impact beliefs and attitudes towards menstruation.....	19
Figure 2 Distribution of participants' age during their EMC.....	29
Figure 3 Grade level of participants when they engaged in EMC.....	30

LIST OF ABBREVIATIONS

1. BATM- Beliefs about and attitudes toward menstruation
2. EMC- Early Menstrual Communication
3. ME- Menstrual Education
4. UNICEF- United Nations Children's Fund

CHAPTER I: INTRODUCTION

Menstruation

Menstruation is an important event for over half of the people in the world (Carneiro, 2022). It also concerns those around them such as family members, partners or coworkers (Carneiro, 2022). It is estimated that 1.8 billion people across the world menstruate every month (United Nations Children's Fund [UNICEF], 2020). Millions of these menstruators (girls, women, transgender men, and non-binary persons) encounter silence, stigma (UNICEF, 2020), bullying and social exclusion (Plan International, 2019). Seminal studies in the United States show that the early menstrual experiences of young people are shrouded in silence, taboo, fear and confusion (Boston Women's Health Book Collective, 1976; Britton, 1996; Brooks-Gunn & Ruble, 1986). Five decades on the narrative around menstruation remains similar (Bobel et al., 2020; Rubinsky et al., 2020; Schmitt et al., 2021).

Menstruation has a distinct impact on the quality and enjoyment of education, as compared to other pubertal changes (Kettaneh, Pulizzi, & Todesco, 2014). During the menarche (first onset of menstruation), girls are still at school and are in an active learning stage (Kettaneh, Pulizzi, & Todesco, 2014). The school environment and its infrastructure can either facilitate or hinder the access to 1) menstrual information, 2) sanitary products, 3) places to change and discard sanitary products, 4) safe water and sanitation, 5) emotional support (Marván & Alcalá-Herrera, 2019; Kettaneh, Pulizzi, & Todesco, 2014). Hindrances of such necessities deprive girls of access to information and facilities to manage their menstruation in an informed, and dignified way (UNICEF, 2020). Further, it shapes the way they derive meaning and interpret their menstrual experiences throughout their life. (Jackson & Falmagne, 2013; Rubinsky et al., 2020).

Throughout the proposal, we reluctantly refer to menstruating bodies as girls and females and those not experiencing menstruation as boys and males. Because the seminal and majority of the contemporary studies that we draw our learnings from refer to them that way. We earnestly acknowledge that menstruation is not a strictly feminine attribute (Bobel, 2019) and is not attached to just one gender (Przybylo & Fahs, 2018). Not all who menstruate identify as a woman (transgender man), and not all girls and women who identify as a woman menstruate (transgender woman, premenarcheal girls, and post-menopausal women) (Bobel, 2019). Some non-binary youths who do not conform to the binary assignment of male and female also menstruate (Frank, 2020).

The following paragraphs give an overview of the basic biology of menstruation, its social meanings, and the impact it has on young people. The paper then outlines how early conversation about menstruation shape young people's attitude about it. Following this, gaps in such literature in the American context among youths, particularly male figures is addressed. Finally, the contribution that this study can make to understand the relationship between American youth's early communication about menstruation and their current attitude about menstruation is described.

A Biological Evidence- Hormonal Interplay

Menstruation is a normal biological process, a natural aspect of female reproductive cycle (Alharbi et al., 2018; Riley et al., 2020). It is defined as a monthly shedding off of inner lining of the uterus (endometrium) in the form of blood through the vaginal opening (Saei Ghare Naz et al., 2020). One of the phases of pubertal development involves maturation of the ovaries in young girls. This causes an increase in the release of gonadal hormones. These changes are the result of the interplay of three endocrine glands in the body such as hypothalamus, pituitary

(located in brain) and gonad (ovary). These glands together form the hypothalamic–pituitary–gonadal (HPG) axis. This regulates secondary sexual characteristics and also controls the menstrual cycle (Allison & Hyde, 2013).

The first onset of menstruation called menarche and the subsequent monthly menstrual cycles involves synchronized release of hormones from this axis (Allison & Hyde, 2013). These hormones stimulate the maturation and release of eggs from the ovaries once a month in girls. Under the hormonal influence in the body, the cells in the endometrium proliferate, and differentiate to prepare for implantation of a fertilized egg (Jabbour et al., 2006). In the absence of sperm to fertilize the egg, the endometrium sloughs off and flows as menstrual blood (Jabbour et al., 2006; Saei Ghare Naz et al., 2020).

The average median age of US girls at menarche is 12.25 years, which is a slight reduction of over 2.5-4 months during the past 25 years (Biro et al., 2018). The median age at menarche varies from 12.0 years (in Black individuals) to 12.7 years (in White individuals). There is a slight reduction of over 2.5-4 months during the past 25 years in the United States (Biro et al., 2018). Thus, girls are menstruating at earlier ages than their counterparts 25 years ago. Females continue to menstruate until menopause, which is a permanent cessation of menstruation for a span of 12 months in the absence of any disease (Ullin et al., 2020). The average age of menopause is 51 years. On average, women menstruate for nearly four decades of their lifetime (Ullin et al., 2020). This shows that the menstruation is experienced by women for a significant portion of their life.

Social Construct- Silence, Stigma and Burden

Menstruation, a deeply personal experience has its varied connotations in public realms (McCarthy and Lahiri-Dutt, 2020). For instance, menarche has implications in girls' mobility

and access to education (Jewitt & Ryley, 2014). To understand the extent of menstrual restrictions that some populations face in North America, Riley et al. (2020) reviewed 21 studies conducted in North America from 2000 to 2019. The authors synthesized two restrictions around menstruation namely social and structural (Riley et al., 2020). The social restrictions include communication around menstruation, taking a bath, swimming, conversing with males, and include restrictions around clothing. The structural restrictions are inaccessibility to toilets, or the absence of tools to maintain hygiene (Riley et al., 2020a).

Almost half of the world's population confronts such stigma at some point in their lives (Kowalski & Chapple, 2000). Such stigma often manifests in behavioral expectations such as the need to contain and conceal the menstrual status (Barrington et al., 2021). A systematic study by Chandra-Mouli and Patel (2017) in low- middle-income countries found that menstruating girls in India, Kenya and Nepal were expected to avoid going to the kitchen, bedroom, schools, and participating in sports or religious ceremonies. Menstruating girls in rural India, Brazil, Egypt, and urban Sri Lanka have disrupted daily activities (Chandra-Mouli & Patel, 2017). In Western societies, menarche is considered a hygienic crisis that needs management in a confidential way (Bobel et al., 2020; Mondragon & Txertudi, 2019). Girls receive contradictory messages about menstruation, they learn that it is a normal, and natural occurrence but should be hidden (Marván & Alcalá-Herrera, 2019). These narratives are rooted on the theme that menstruation is a taboo, dirty, impure, sin, shame and a danger (Bobel et al., 2020; Chandra-Mouli & Patel, 2017; Hennegan et al., 2019; Riley et al., 2020). Such socio-cultural narratives stigmatize menstruation.

The menstruating bodies are in a unique position where they are deemed responsible for their bodily process but do not always control the meanings attached to it (McCarthy and Lahiri-Dutt, 2020). They tend to claim normalcy by hiding their menstruation status (Chandra-Mouli &

Patel, 2017). Internalization of the stigma, menstrual norms and social discourses incites “self-surveillance and self-disciplinary” behaviors among females (Wood, 2020, p. 326). Some also report yielding to the wider social assumption that menstrual suffering such as pain, and discomfort is normal and that they should maintain silence around it (Barrington et al., 2021; Rubinsky et al., 2020). A study comparing the experiences of menstruation in high income with low to middle income countries concludes that the way menstrual stigma impacted the menstrual experiences and wellbeing of females across these countries were strikingly similar (Barrington et al., 2021). Such internalized menstrual stigma shaped the need to hide the menses and regulate their behaviors and activities accordingly (Barrington et al., 2021; Hennegan et al., 2019).

The societal neglect of menstruation as a normal biological process is reflected in the sales tax imposed on menstrual hygiene products, indicating that they are luxury goods (Crawford & Waldman, 2018). As of July 28, 2022, nearly half of the United States (23 states) impose sales tax on menstrual products (Alliance for Period Supplies, 2022). Girls from low-income households struggle to afford (Cardoso et al., 2021) and do not have access (Singh et al., 2020) to menstrual supplies. A study that surveyed 1,010 menstruating teenagers in the United States in 2021 concluded that one in every five teenagers struggled to afford period supplies (Thinx & PERIOD, 2021). In North Carolina, where menstrual products are taxed, one in five women and girls aged 12 to 44 live below the Federal poverty line. An extra expense that females must incur to manage their most basic biological need as menstruation puts an unequal burden on them, accentuating the gender discrimination (Alliance for Period Supplies, 2019; Crawford & Waldman, 2018). Thus, the most biological “fact of life” has been construed and revised in a myriad way to suit the social, religious, economic ecosystem and aesthetic needs of the people (Linton, 2019, p. 12).

Impact of Negative Social Construct

Internalization of profound silence, stigma and negative connotations around menstruation create a discouraging environment to initiate a conversation about the menstruation (Gundi & Subramanyam, 2019). This negatively impacts menstruating girls' physical and psychological health including their social participation and education (Hennegan et al., 2019). For instance, adhering to common taboos of avoiding some foods, reduced intake of water and milk caused fatigue (Ellis et al., 2016), impacting their physical health. Girls report being intimidated and embarrassed by their male teachers (Lahme et al., 2018), and peers (Benshaul-Tolonen et al., 2020) at school. Girls report being teased, mocked and humiliated for their menstrual status at school, and do not receive psychological support as expected at home (Lahme et al., 2018). Young girls from poor households in the United States have a hard time affording menstrual products and report wearing the products longer than recommended (Cardoso et al., 2021). These experiences contribute to their stress, anxiety and reduced self-esteem impacting their mental well-being (Cardoso et al., 2021; Lahme et al., 2018; Tegegne & Sisay, 2014). Cultures that forbade girls from going outside and interacting with males or teachers who send girls home from school due to a detected odor or stained garments during menstruation reduce school attendance and participation in social activities (Chebii, 2018; Mutunda Lahme & Stern, 2017; Rheinländer et al., 2019).

Early Menstrual Communication (EMC)

Seminal and recent studies point out that girls who receive education regarding the menstrual process prior to their menarche report positive experiences during the transition (Koff et al., 1982; Moon et al., 2020). For young girls, the source of menstrual information is their mother (at home), teachers (at school), and their closest girlfriends (home and school) (Amaral et

al., 2011; Anikwe et al., 2020; Brantelid et al., 2014; Rubinsky et al., 2020; Schmitt et al., 2021). However, they report the communication around menstruation as being sparse, unrelatable, and untimely (Herbert et al., 2017; Rubinsky et al., 2020). Early conversation about menstruation is full of negative experiences such as confusion, stress, fear (Erchull, 2020; Hawkey, Ussher & Perz, 2020), silence, embarrassment (Mathew, 2018; Fennie et al., 2022), annoyance and stigma (Brantelid et al., 2014; Erchull, 2020; Herbert et al., 2017; Rubinsky et al., 2020). In the current study, we operationalize early menstrual communication as the first memorable verbal or nonverbal exchanges regarding the definition or process of menstruation. In the current study, experiences of EMC include people that they had their first menstrual conversation with (peer or non-peer), type of conversation topic (positive/neutral or negative), their perception of the conversation (cognitive or emotional). Cognitive aspect is measured by asking objective perception of the EMC such as how frequent, timely or important they thought their conversation was. Emotional aspect is examined using subjective perception of the EMC such as how stressful, confused, or ashamed they felt engaging in those early conversations.

EMC at Home

Participants report of gap in EMC in their home because of the “shame and wider disapproval from family and friends” (Hawkey, Ussher & Perz, 2020, p.105). A qualitative study in the United States found that talking about menstruation at home was a taboo and that an open discussion with mothers around the topic was not possible, as some reported being “embarrassed and ashamed” (Schmitt et al., 2021, p. 99). Schmitt et al. (2021) report that parents did not hold an open discussion with their daughters, because they anticipated that the schools give menstruation related information, not them.

Further, mothers who are the primary source of information regarding menstruation lack knowledge and experience or are embarrassed to discuss the topic with their menstruating children (Marván & Alcalá-Herrera, 2019). Thus, it is difficult for young girls to have an open, and informed conversation about menstruation at home.

EMC at School

Communication around menstruation in schools is untimely (Crockett et al., 2019), unrelatable (Schmitt et al., 2021) and filled with negative experiences of teasing or being teased (Plan International, 2019) for the menstrual status. The average age of menarche is falling globally including in the United States (Biro et al., 2018; Yermachenko & Dvornyk, 2014). Adolescents report receiving relevant education at a time when they have already experienced the pubertal change (Crockett et al., 2019). Schools generally organize puberty education by grade level, however students who are in different stages of pubertal development might not relate with the content (Crockett et al., 2019). A study among school girls in urban cities of the United States reports that the menstruation education did not include practical guidance on menstruation, the focus was on biological and science based topics (Schmitt et al., 2021). Thus, a menstrual education session catering to varied needs of adolescents is still a challenge in the United States (Crockett et al., 2019).

A study by Plan International in the UK found that one in five girls (20%) were either teased or bullied for their periods and two thirds (67%) experienced this in their schools (Plan International, 2019). A study in Northern Tanzania found that over 80% of the participants fear being teased by their male peers during period, and 13% reported experiencing it (Benshaul-Tolonen et al., 2020). The authors elaborate that while 43% of the boys reported teasing girls during their period because they thought that the process was embarrassing, 20% of the boys did

so as they thought menstruation was unnatural. Another, 20% teased menstruating girls because they saw their male friends doing so (Benshaul-Tolonen et al., 2020). Thus, in schools, menstrual conversation is full of negative experiences of teasing or being teased for the menstrual status.

Menstrual Education (ME) in School

Menstruation is one of the major pubertal changes and is covered as a part of puberty instructions (Agnew & Gunn, 2019). Formal instruction on puberty is typically included in sexual education curricula in educational institutes (Crockett et al., 2019). In some cases it is delivered through a free-standing intervention session with an objective to improve specific attitudes, develop skills or change behaviors (such as safe hygiene practices) (Crockett et al., 2019).

Variation in ME in American Schools. A periodic study called School Health Policies and Practices Study (SHPPS) by the Centers for Disease Control and Prevention [CDC] (2016) outline that 51.9% of elementary schools, 75.4% of middle schools and 79.6% of high school in the US taught human sexuality education (CDC, 2016). However, there is no mention of the scope of puberty instruction, for instance if topic such as menstruation is covered (Crockett et al., 2019). The Sexuality Information and Education Council of the United States [SIECUS] (2004), and the Future of Sex Initiative [FoSE] (2012), along with UNESCO (2009) have designed K-12 sexual health learning standards. This guideline recommends that by the age of 12, students should know about the menstruation process (SIECUS, 2004; UNESCO, 2009). However, they leave it on the teachers to make the teachings personally relevant to students and select learning materials to help students meet those standards (FoSE, 2012).

North Carolina is one among the 38 States which mandate schools to provide sexual and reproductive health education (Guttmacher Institute, 2022). The North Carolina Department of Public Instruction has laid out essential standards for health education for grades 3-12

mentioning objectives around puberty (physical and emotional changes) (The North Carolina Department of Public Instruction, 2019). However, it is up to the school and particularly the teacher to design activities to achieve those objectives. There is no documentation of how those objectives are fulfilled, which topics are covered, the resources that are used by teachers or how much time and focus is given to discuss menstrual health (J. Williams, personal communication, 8 August, 2022). Thus, there is a deep variation in the way school curricula incorporate (or do not incorporate) these standards while teaching puberty topics such as menstruation.

Gender Segregation in ME. In the majority of countries around the world, puberty education programs and free-standing menstrual hygiene sessions are delivered only to girls (Crockett et al., 2019). In the United States, gender segregation is a common practice while delivering formal sex education (Crockett et al., 2019; Rough, 2018). Rough (2018) notes that students are separated so that they feel comfortable while enquiring sensitive questions. In the United States, discomfort in discussing puberty and sexuality topics runs deep in diverse institutions (Schalet et al., 2014), such as schools. Segregating gender in ME adds to the stigma narration by fostering misconceptions about pubertal development topics in general (Crockett et al., 2019). Crockett et al. (2019) conclude that discussion about pubertal changes in school should include both sexes. Such discussions should encourage respect, tolerance, and empathy between the sexes. UNSECO report (Kettaneh, Pulizzi & Todesco, 2014) highlights the need for both sexes to understand about each other's unique puberty experiences, and the relation between those encounters. Additionally, male figures can play an integral role in supporting their menstruating family members, peers or colleagues (House et al., 2013).

Youth's Beliefs About and Attitude Towards Menstruation (BATM)

Young people express limited knowledge, negative attitudes and experiences surrounding menstruation globally and in the United States. This is evidenced by seminal and current studies (Brooks-Gunn & Ruble, 1986; Chang et al., 2012; Cooper & Koch, 2007; Fennie et al., 2022; Herbert et al., 2017; Peranovic & Bentley, 2017; Rastogi et al., 2019; Schmitt et al., 2021; Stubbs & Costos, 2004). Menstrual taboos are seen worldwide and in western societies like the United States, young people receive paradoxical messages about menstruation. Menstruation is a normal and natural event, but should be hidden, particularly from male figures (Marván & Alcalá-Herrera, 2019; White, 2013). Premenarcheal girls are poorly prepared for their first menstrual experience due to the pervasive silence and stigma around the topic (Marván & Alcalá-Herrera, 2019; White, 2013). Similarly, studies show that boys receive inaccurate and incomplete information about menstruation, often from informal sources (Erchull, 2020; Linton, 2019).

Impact of EMC on Youth's BATM

While young girls find it difficult to process and express their feelings regarding menstruation (Marván & Alcalá-Herrera, 2019), boys “pieced together” (Allen et al., 2011, p. 141) information about this “mysterious incident” (Linton, 2019, p. 8). Studies show that boys and men absorb and adopt secrecy, stigmatized (Peranovic & Bentley, 2017) negative, and stereotypical attitudes towards menstruation (Allen et al., 2011; Wong et al., 2013). Men reflect to their early experience with menstruation as confusion, and ignorance. Their questions and curiosities were shunned or left unanswered (Allen et al., 2011; Chang et al., 2012; Peranovic & Bentley, 2017). Such ideologies get integrated into young men's worldviews, which has implications for their relationships with women, and enforces sexist attitudes (Allen et al., 2011).

Secrecy around menstruation in the public realm and private settings such as family impacts both men and women (Mathew, 2018). Men develop an insensitive attitude towards menstruation. They start internalizing that it is only a “female business” (Mathew, 2018, p. 400), or a “woman’s problem” (Peranovic & Bentley, 2017, p. 121) and should be away from such conversation. Internalizing such secrecy and stigma, girls and women develop ambivalent (White, 2013) or negative attitudes towards menstruation (Hwang, 2018; Mathew, 2018). They go to great lengths to avoid conversation around it and hide the menstrual status from men (Peranovic & Bentley, 2017). These early negative, and confusing meanings attached to menstruation shape the way young girls and boys derive meaning and interpret their menstrual experiences throughout their adulthood (Jackson & Falmagne, 2013; Rubinsky et al., 2020).

Significance of the Study

There are many studies about menstrual experiences in low to middle-income countries (Anikwe et al., 2020; Chandra-Mouli & Patel, 2017; Ellis et al., 2016; Gundi & Subramanyam, 2020; Hennegan et al., 2019; Kemigisha et al., 2020). Men’s and women’s beliefs and attitudes about menstruation are studied in high-income countries (Chang et al., 2012; Hwang, 2018; Peranovic & Bentley, 2017). In the United States, much of the evidence around menstruation is from low-income girls (Herbert et al., 2017) or low-income African American girls in particular (Cooper & Koch, 2007). Studies examining attitudes about menstruation in the American context are focused on women only and are either outdated (Brooks-Gunn & Ruble, 1986; Geller et al., 1999) or do not use the comprehensive belief about and attitude towards menstruation instrument (Morrison LA et al., 2010).

Research studying the communication component of menstruation is focused on intergenerational transfer of information, for instance among grandmothers, mothers and

daughters (Field-Springer et al., 2018) or between mothers and daughters (Costos et al., 2002). There is a lack of evidence on experiences of early, general conversation about menstruation among youths and how that impacts their current belief and attitude towards menstruation. Crockett et al. (2019) recommend that youths should be surveyed about their experiences of early pubertal education and instructional approaches while designing puberty education programs. To the best of our knowledge, there are no studies exploring suggestions from undergraduate males and females to improve communication about menstruation.

Therefore, examining young people's early experiences of communicating about menstruation, and their current beliefs and attitudes towards menstruation will provide evidence to the school boards, health teachers, school nurses, and families to revisit and improve the early menstrual communication encounters with adolescents. The current research gathered feedback from the youths for developing an effective session on communicating about menstruation which can inform future interventions about how early adolescents and young people would like to learn about menstruation. We generated such evidence using survey questionnaires including open-ended questions among undergraduate college students. The findings of which can be used to assist in opening communication channels around taboo topics such as menstruation among young people at home and school.

Theoretical Framework: Goffman's Stigma Theory

The term stigma has its origin in Latin *stigmata*- meaning mark and Greeks *stizein* referring to a tattoo (Merriam Webster, n.d.). Ancient Greeks cut or left burned marks in the bodies of a criminal, a traitor, or a slave. This bodily sign referred to as a stigma would identify the beholder as tainted or immoral, who ought to be avoided (Goffman, 1963). Erving Goffman (1963) provided the seminal conceptualization of stigma as a deeply discrediting attribute. An attribute that influences people to look at a usual person as a “tainted and discounted one”; a difference that results in a spoiled identity (Goffman, 1963, p. 3).

Goffman (1963) elaborates that the experience of stigma varies based on the level of concealability. While *discredited* refers to the type of stigma that is observable, *discreditable* implies the ones which is concealable (Chaudoir et al., 2013; Goffman, 1963). The efforts of *discredited* are on mending their damaged image, the *discreditable* will behave carefully and go at great lengths to conceal their stigmatized status (Goffman, 1963; Kowalski & Chapple, 2000). Recently, the meaning of stigma has extended to include attributes that invite widespread social disapproval (Bos et al., 2013).

Goffman (1963) discusses three different types of stigmas namely “abominations of the body”, “blemishes of individual character” and “tribal stigma” (Goffman, 1963, p. 4). First, abominations involve visible physical deformities such as burns, scars or deformities. Second, blemishes of character include criminality and addictions. Finally, tribal stigma concerns those associated with marginalized groups such as gender, race, or nationality (Goffman, 1963; Johnston-Robledo & Chrisler, 2013).

Health Related Stigma

Goffman's stigma theory is a treatise pioneered in the field of Sociology. Six decades on and it is increasingly inspiring studies in other fields such as medicine, the health sciences and so on (Bos et al., 2013). Stigma theory is used to study the consequences of and implications of stigma in a stigmatized individual in the health context. Weiss and Ramakrishna (2006) define health-related stigma as "a social process or related personal experience characterized by exclusion, rejection, blame, or devaluation that results from experience or reasonable anticipation of an adverse social judgment about a person or group identified with a particular health problem" (p. 536). Turan et al. (2019) explain that it also includes prejudiced attitudes, beliefs, and values including discriminatory behavior, practices, and policies. Studying health-related stigma involves social and psychological constructs including the culture that facilitate such stigma (Airhihenbuwa et al., 2014). Stigma is studied in multiple health contexts such as in mental illness (Link et al., 2004), menstruation (Johnston-Robledo & Chrisler, 2013), abortion (Cockrill, 2013), acquired immune deficiency syndrome (AIDS), and obesity (Airhihenbuwa et al., 2014), and adolescent sexual and reproductive health (Hall et al., 2018).

Menstrual Stigma

Menstrual blood as a stigmatizing mark fulfills all the three categories of Goffman's stigma types (Johnston-Robledo & Chrisler, 2013). It is an abomination, as it is viewed as disgusting, aversive or having a contaminating effect (Greenberg et al., 2004; Johnston-Robledo & Chrisler, 2013; MacLean et al., 2020). Menstrual blood is considered as a blemish on a woman's character. Research shows that even a thought of menstrual blood caused avoidance and social distancing from the menstruator (Roberts et al., 2002). Menstruation is associated with only girls and women; thus, menstrual blood also serves as a specific identity of femaleness

(Johnston-Robledo & Chrisler, 2013). In this way, menstruation fulfills the character of a tribal stigma— attached with specific groups. Societal restrictions on certain activities and clothing during menstruation send a message that a female’s body is different from the normative and privileged male body (Johnston-Robledo & Chrisler, 2013; MacLean et al., 2020; Riley et al., 2020).

Menstrual stigma manifests in public in two ways; overtly or subtly. Overt manifestations include avoidance to interact or social distancing from females (Bos et al., 2013; Roberts et al., 2002). Subtle representation are hidden stigma portrayed through media (such as in advertisements, magazine articles, books) that emphasize secrecy, delicacy, freshness, and need to avoid embarrassment during menstruation (McHugh, 2020). Kissling (2022) describe that the menstrual products are advertised to be small to carry inconspicuously in one’s bag. In settings where girls use reusable sanitary pads, 79% of them reported washing and drying in a place far from public view (Morrison et al., 2018). All efforts are made to conceal the stigmatizing mark. Johnston-Robledo and Chrisler (2013) assert that menstruation qualifies as a concealed stigma, or a *discreditable* stigma as coined by Goffman (1963). They synthesize that females put in great effort to conceal their menstrual status. It remains hidden until they express it or the menstrual blood leaks through their clothes (Johnston-Robledo & Chrisler, 2013).

Internalized Menstrual Stigma

Goffman (1963) theorized about the presence of self-hate and self-derogation in a person in response to their stigmatized condition in public. There are evidence that people with concealed stigma (such as sexual minorities) showed more internalized stigma then the ones with conspicuous stigma (such as African American) (Cook et al., 2011; Hatzenbuehler, 2009). Young girls report negative experiences with early menstrual conversation. This includes

confusion, stress, fear (Erchull, 2020; Hawkey, Ussher & Perz, 2020), silence, embarrassment (Mathew, 2018; Fennie et al., 2022), annoyance and stigma (Bobel et al., 2020; Brantelid et al., 2014; Herbert et al., 2017; Rubinsky et al., 2020). There are early accounts of “shame and wider disapproval from family and friends” (Hawkey, Ussher & Perz, 2020, p.105). Internalization of such experiences, menstrual norms and social discourses incite “self-surveillance and self-disciplinary” behaviors among the girls (Wood, 2020, p. 326). Therefore, we are interested in understanding the impact of internalized stigma on young females’ beliefs and attitudes about menstruation. We also want to examine how to have their non-menstruating counterparts, young males processed the social stigma about menstruation.

Menstrual Stigma and Communication

Goffman (1963) asserts that stigma is ingrained in social interactions or as Johnston-Robledo and Chrisler (2013) state in the absence of interactions. Goffman (1963) points out that the social interaction between the stigmatized and non-stigmatized is awkward, strained, and uncomfortable. Early sources of menstrual information for young girls are their mothers, teachers, their closest girlfriends (Anikwe et al., 2020; Rubinsky et al., 2020; Schmitt et al., 2021). This conversation with mothers, teachers and friends is inadequate, untimely, or awkward and strained. For instance, it is reported that mothers lack knowledge and experience or are embarrassed to discuss the topic with their daughters (Marván & Alcalá-Herrera, 2019). For young girls, puberty education is untimely (Crockett et al., 2019), unrelated (Rubinsky et al., 2020), and full of negative experiences of teasing or being teased for their menstrual status (Plan International, 2019; Benschaul-Tolonen et al., 2020).

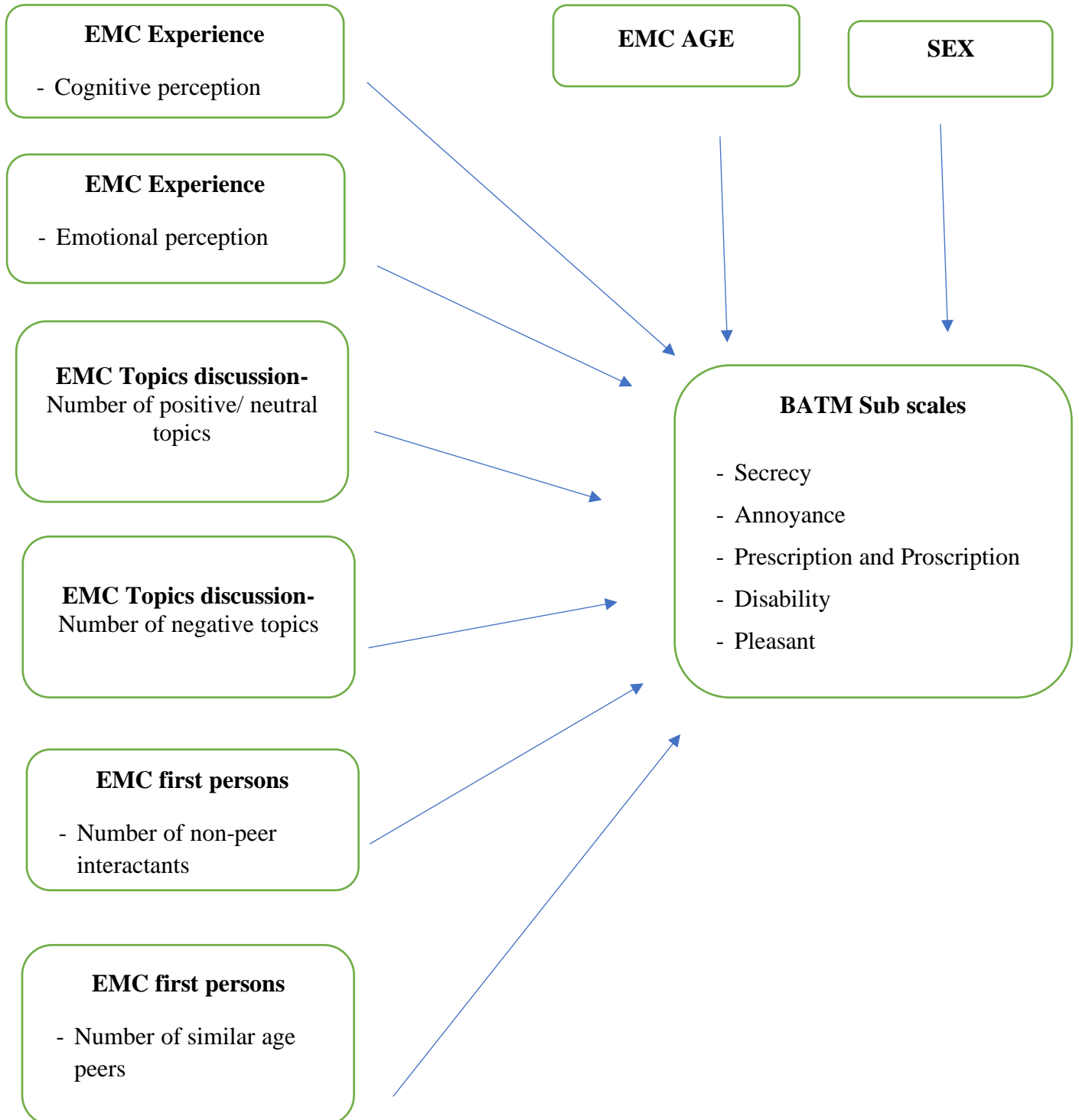
The current research examined young females' and males’ beliefs and attitudes toward menstruation, and how social stigma manifests in their beliefs and attitudes about menstruation.

It also expanded the understanding of how experiences of early interactions (or absence of it) about menstruation shapes American youth's attitude toward the stigmatized topic as menstruation (Figure 1). Additionally, we explored the suggestions from young people to inform puberty education sessions and menstruation education in the United States. This we believe extended our understanding of involving both possessors of and non-possessors of the stigma attribute in developing future communication interventions.

Conceptual Framework

Figure 1

A conceptual model describing factors that impact beliefs and attitudes towards menstruation



Research Questions and Hypothesis

Menstruation is a normal biological process, but it is shrouded in silence, and stigma in American culture (Barrington et al., 2021; Riley et al., 2020). Internalization of such narratives creates a discouraging environment for discussing about the menstrual process, which negatively impacts menstruator's health and life (Gundi & Subramanyam, 2019; Hennegan et al., 2019). Youths express limited knowledge, and negative attitudes towards menstruation globally and in the United States (Chang et al., 2012; Fennie et al., 2022; Herbert et al., 2017; Rastogi et al., 2019; Schmitt et al., 2021). Yielding to such stigma around menstruation, girls and women make every effort to hide their menses and regulate their behaviors and activities (Barrington et al., 2021; Hennegan et al., 2019). Boys and men absorb and adopt secrecy, stigmatized (Peranovic & Bentley, 2017) negative, and stereotypical attitudes towards menstruation (Allen et al., 2011; Wong et al., 2013). Such ingrained set of menstrual beliefs in men impacts their relationships with women, and enforces sexist attitudes (Allen et al., 2011).

RQ 1- What are the young adults' early menstrual communication experiences? Specifically, at what age, which grade level and with whom do they communicate about menstruation?

RQ 2- During the young adults' early menstrual communication encounter, what specific topic do they discuss? How do young males and females differ in terms of EMC topics of discussion?

RQ 3- How did young adults perceive their EMC, cognitively and emotionally? Are there any gender differences in young males and females with respect to the perception of EMC experiences?

This study examined young females and males' beliefs about and attitudes toward menstruation. This was explored based on five major sub-scales, for example menstruation as a topic of secrecy, annoyance, prescription and proscription, disability and pleasant experience.

RQ 4- What are the young adult's beliefs and attitudes towards menstruation with regards to the five sub-scales, namely secrecy, annoyance, prescription and proscription, disability, and pleasantness? Are there any gender differences between young males and females in their beliefs about and attitudes toward menstruation?

Seminal and recent studies point out that girls who receive education regarding the menstrual process prior to their menarche report positive experiences during the transition (Koff et al., 1982; Moon et al., 2020). However, young people describe their early conversation around menstruation at home and school as sparse, untimely, and unrelatable (Herbert et al., 2017; Rubinsky et al., 2020). They report being confused, stressed, fearful (Erchull, 2020; Hawkey, Ussher & Perz, 2020), and embarrassed (Mathew, 2018; Fennie et al., 2022). Such experiences shape the way young people derive meaning and interpret their menstrual experiences throughout their adult life (Jackson & Falmagne, 2013; Rubinsky et al., 2020).

The current study aimed to examine young people's early experiences of communicating about menstruation, the relationship between their early interaction about menstruation, and their current beliefs and attitudes about menstruation. Drawing on previous literature and Goffman's Stigma theory we presented the following hypothesis.

H1- The young adult's beliefs and attitude towards menstruation will be predicted by their sex, age during EMC, emotional and cognitive perception of EMC, number of positive/neutral and negative topics discussed in EMC, and types of interactants (peer or non-peer).

Crockett et al. (2019) studied puberty education in a global context and recommended that youths should be surveyed about their experiences of early pubertal education and instructional approaches. This can inform future puberty education programs. This study attempted to examine young males and females' suggestions to improve early menstrual communication.

RQ 5- What are young adults' suggestions for designing a session on early communication about menstruation? Their suggestions about the session was explored in the following areas 1) who should be the participants, 2) who should facilitate it, 3) the location and total duration of it, 4) topics to be covered and emphasized, and 5) the medium and process of delivery.

CHAPTER II: METHODS

Participants

The current study surveyed 368 undergraduate students who were 18 years and older. The participants were recruited at East Carolina University, a large public university in the Southeastern United States with over 27,152 students (East Carolina University, 2022). The participants' age ranged from 18 to 53 years ($M = 21.3$, $SD = 4.7$). Among them, 153 identified as males, 214 as females, and one individual chose the 'other category'. When asked to choose one type of survey (either male or female version of the survey), this participant chose to answer the female version of the survey. Therefore, there were 215 female survey responses. Most of the respondents self-reported as White ($n = 254$, 69%), followed by Black or African American ($n = 52$, 14.1%), two or more races ($n = 37$, 10.1%), Asian ($n = 8$, 2.2%) Latino/Hispanic ($n = 7$, 1.9%) and American Indian and Alaska Native ($n = 4$, 1.1%).

Procedure

The IRB approval for this study was obtained from ECU ethical review board. Information about the total number of freshmen in face-to-face and online classes, along with the instructor's name in the College of Fine Arts and Communication was obtained through relevant administrative staff. Three professors from the School of Communication and three from the School of Art and Design assisted with the data collection process.

Each professor was approached with research objectives, and a solicitation email. All agreed to help disseminate the solicitation email. Approximately 900 students were solicited to participate in the study with the valid survey link. Among them, 636 started the survey, and 368 completed the entire survey.

The Qualtrics online survey tool was used to collect data. The online survey link was made available for two weeks. Prior to the start of the survey, each participant read the information about the study, such as objectives, nature of the study, risks and benefits associated with the study, their role in the research, the right to quit at any moment of the study, and the way confidentiality and anonymity would be maintained. Once students agreed to participate, they moved ahead with the survey questions. All students who started the survey obtained extra credits for their participation.

Measures

The online survey included four sections namely demographic questions, early experiences of communicating about menstruation (EMC), belief about and attitude towards the menstruation scale (BATM), and suggestions to improve early communication experiences.

Section I- Demographic Data

This section explored three demographic details namely participants' gender, their age, and race/ethnicity. Apart from the binary option, the gender had an "other" option. However, the survey included a standard BATM instrument which involved participants giving answers as either male or female. So, even if the "other" option was chosen, the participants were prompted to choose a male or a female version of the survey.

Section II- Experiences of Early Menstrual Communication (EMC)

This section included 17 questions about participants' EMC including the place, the persons, the topics of conversation, and their description of EMC experiences. To find out their experiences of EMC, a 10-item semantic differential scale was used. While five of these questions examined the way participants perceived their conversation cognitively, the remaining five assessed the emotional aspect. The cognitive perception included questions such as how

relatable, timely, frequent, important, and helpful they thought their EMC was. The emotional perception was explored by enquiring how relaxed, certain, confident, unashamed and satisfied they were feeling during their EMC. The overall reliability of the EMC scale was good ($\alpha = .85$). The reliability of the emotional and cognitive perception scale was .82 and .80, respectively.

Section III- includes Beliefs about and Attitudes Towards Menstruation (BATM)

This section included a 45-item five-point Likert scale measuring BATM, 1 indicating strongly disagree and 5 indicating strongly agree (Marvan et al., 2006). Each question has two versions, one for males and the other for females. BATM scale includes five sub-scales, namely 1) secrecy, 2) annoyance, 3) proscriptions and prescriptions, 4) disability, and 5) pleasant. Each statement in the first four sub-scale is worded negatively, except for the pleasant sub-scale and two reverse items in the secrecy sub-scale. The authors in the original study reported a high-reliability score of 0.89 (Marván et al., 2006).

There were 12 items on “secrecy” that assessed the participants’ thoughts about menstruation as a secret topic. Of all the 45 items, only two items were reverse ones which is in the secrecy sub-scale. Sample items for secrecy included “it is important to talk about the menstrual period with men” (for females) and “it is important that women talk about the menstrual period with men” (for males). Example of a reverse item include “It is important to talk about the menstrual period with men” (for females) and “It is important that women talk about the menstrual period with men” (for females).

There were 13 items to measure the “annoyance” sub-scale, and it measured the participants’ idea of menstruation being a bothersome event indicating a wish to reject it. The sample item included “it is hard to live with the period” (for females) and “it is hard for women to live with the period” (for males). The “proscriptions and prescriptions” had nine items, and it

explored participants' ideas of activities that women should and should not do while menstruating. For instance, "women must eat or drink hot things when we are having our periods" (for females), and "women must eat or drink hot things when they are having their periods" (for males).

There were five items on "disability" that sought to examine participants' beliefs and attitudes about menstruation as a source of discomfort, keeping them from their normal activities. Sample items were "The period disables women" (for both genders). Finally, the sub-scale "pleasant" with six items explored participants' feelings of menstruation as something to take pride in and a source of well-being. The sample items include "women are proud when we start having our periods" (for females), and women are proud when they start having their periods (for males).

In the current study, the reliability score for individual sub-scale was $\alpha = 0.79$ for secrecy, $\alpha = 0.79$ for annoyance, $\alpha = 0.87$ for proscriptions and prescriptions, $\alpha = 0.77$ for disability, and $\alpha = 0.61$ for pleasant. To examine the reliability score, we combined two versions of the measures and reversed the positive sub-scale pleasant, including the two positive items in the secrecy sub-scale. The overall reliability of the BATM scale was high in the current study, with Cronbach's alpha coefficient of 0.86.

Section IV- Suggestions to Improve Early Menstrual Communication Experiences

This part included questions that explored participants' suggestions for designing an effective menstrual education session. The instructions in this section required participants to imagine a situation where they could design an effective session on "Communication about menstruation" for early adolescents. There was a total of eight questions. Five of them were supplied with closed-ended answer options, and three were open-ended. The five close-ended

questions asked about 1) Intended participants, 2) facilitator, 3) duration of the session, 4) medium for delivering the session, 5) delivery method. The three open-ended questions include 1) the topics that they would include in the session, 2) topics that they would emphasize, and 3) the location for the sessions.

Data Analysis Procedure

The data obtained were cleaned up and entered into Statistical Package for Social Science IBM SPSS Statistics version 28.0. The data was analyzed based on the objectives of the study using descriptive and inferential statistics. Frequency and percentage distribution were used for demographic variables.

CHAPTER III: RESULTS

The current study examined young people's early experiences of communicating about menstruation and how those early communication experience impacted their current beliefs about and attitudes towards menstruation. This study gathered recommendations from the youths to improve menstrual education sessions for young adolescents. We also sought to find the predictors of participant's current belief and attitude towards menstruation, specifically those related to early menstrual communication experiences.

The first two research questions were regarding the age, grade level, location and the persons that the participants had their first menstrual conversations with.

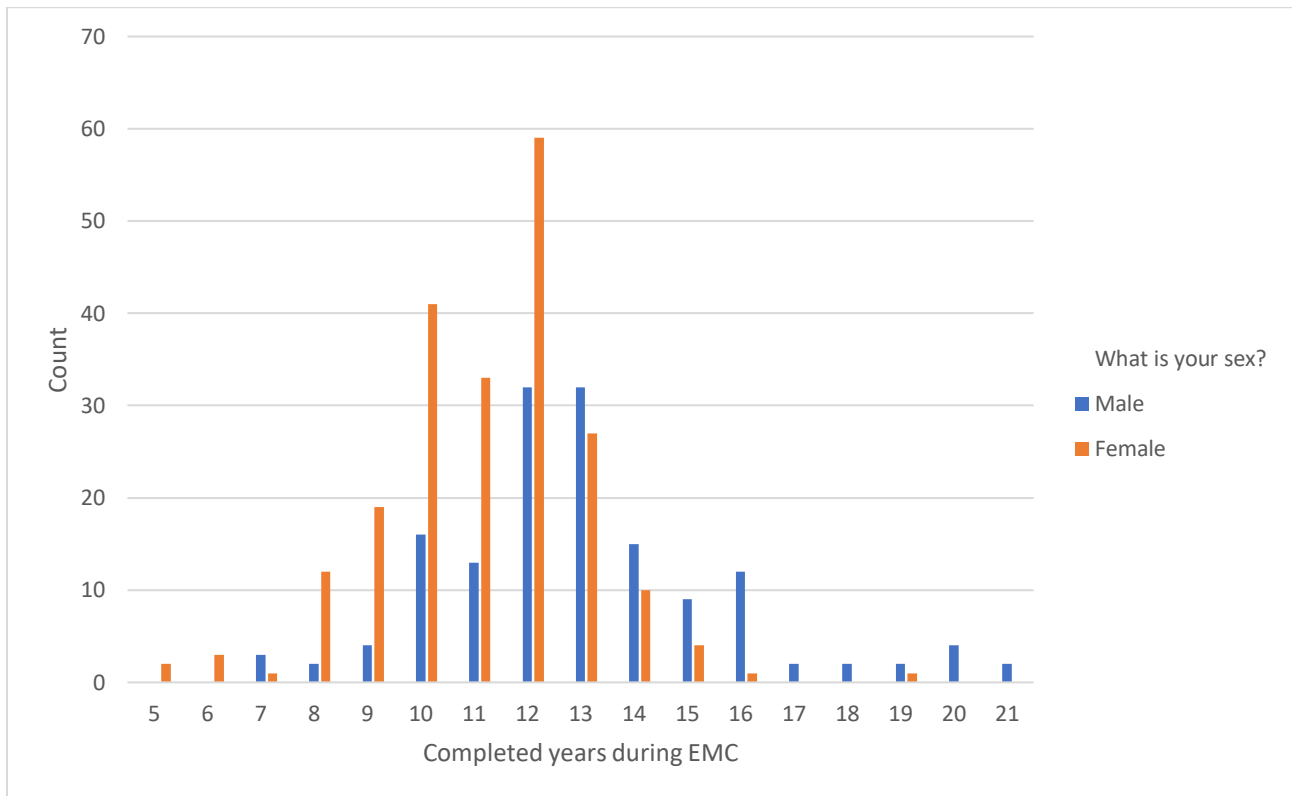
EMC- Age, Grade level, Location, and Persons

This section elaborates on the results of four questions reported by the participants regarding their EMC. This includes their age during their menstrual conversation, their level in the school system (elementary, middle, or high school), their geographic location (within the US and in the world), and the persons with whom they had their EMC with.

The mean age of the participants when they had their EMC was 11.9 years ($SD = 2.5$ years) (Figure 1). The majority of the participants ($n = 278$, 81.8%) reported being between the ages of 9-14 years when they had their EMC. Among them, almost half (47.5%) of them talked about menstruation when between 12-14 years and over a third of them (34.3%) were between the age of 9-11 years. Finally, those who conversed about the topic at 15 years of age or above made up 10.4% ($n = 39$) of the participants. The mean age of EMC for females was 11.1 years ($SD = 1.9$ years), the earliest age reported was five years and the latest age was 16. The mean age of EMC for males was 13 years ($SD = 2.7$ years), the earliest age was seven years and the latest was 21 years.

Figure 2

Distribution of participants' age during their EMC

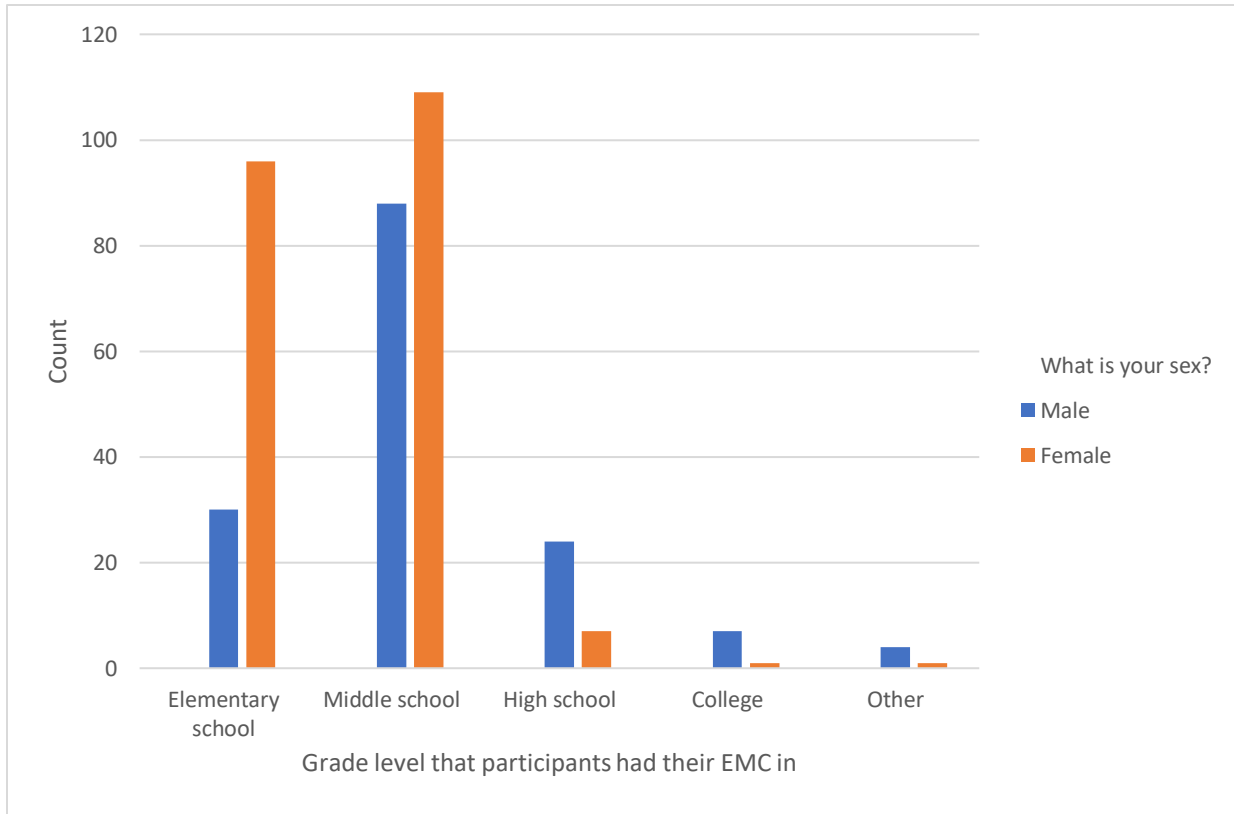


Half of the participants reported their first conversation about menstruation to be at middle school ($n = 197, 53.5\%$), and one-third ($n = 126, 34.2\%$) of them reported it to be at their elementary school (Figure 2). Those who had their first menstrual conversation in high school and college comprised 8.4% ($n = 31$) and 2.2% ($n = 8$), respectively.

Over half of the female participants had their EMC during their elementary school ($n = 96, 44.9\%$), and another half conversed about menstruation at their middle school ($n = 109, 50.9\%$), the rest did at high school ($n = 7, 3.3\%$). In contrast, just under 20% ($n = 30$) of the males reported their EMC at elementary school. The majority of the males ($n = 88, 57.5\%$) reported their EMC at middle school. The rest of them had it in high school ($n = 24, 15.7\%$) and college ($n = 7, 4.6\%$).

Figure 3

Grade level of participants when they engaged in EMC.



Almost all the participants ($n = 354$, 96.2%) were in the United States during their first menstrual conversation. The rest of the participants ($n = 11$, 3%) experienced it in other countries such as Australia, Bangladesh, Canada, England, Germany, Jordan, Kenya, Puerto Rico, and Switzerland. Among those who reported being in the U.S. during their first menstrual conversation, the majority of them resided in North Carolina ($n = 226$, 77.4 %). When asked where they resided in the U.S during their first menstrual conversation, participants reported Virginia ($n = 16$, 5.5%), New York ($n = 9$, 3.1%), Florida ($n = 7$, 2.4%), Pennsylvania ($n = 6$, 2.1%), New Jersey ($n = 5$, 1.7%), Texas ($n = 3$, 1%). Combined, participants from Maine ($n = 2$), Maryland ($n = 2$), and Massachusetts ($n = 2$) made 2.1%.

Participants reported multiple people whom they had their EMC with (see Table 1). Mother was the most reported person (n = 231), of which a significant percentage (81.8%) was by female participants, and over a third (36.6%) was by male participants. Teachers were the second highest reported person (n= 152). While a significant percentage (52.6%) of males described their EMC with their teachers, only a third of females (33.6%) reported the same. The male participants reported that their EMC was also with their male friends (19.7%), female friends (18.4%), and father (13.2%). For females, it was their female friends (28%), and sister (18.2%). A mere 1.4% (n = 5) of the participants selected other option, and described a school nurse, youth minister, or a classmate, as the person whom they had their EMC.

Table 1

Individuals that participants had their EMC with

Person with whom participants had EMC	Count, % within sex		Total
	Male	Female	
Teacher	80, 52.6%	72, 33.6%	152
Sister	11, 7.2%	39, 18.2%	50
Mother	56, 36.8%	175, 81.8%	231
Grandmother	1, 0.7%	11, 5.1%	12
Aunt	2, 1.3%	13, 6.1%	15
Father	20, 13.2%	5, 2.3%	25
Male sibling	5, 3.3%	0, 0%	5
Male Friends	30, 19.7%	0, 0%	30
Female friends	28, 18.4%	60, 28.0%	88
Partner (GF/BF)	9, 5.9%	0, 0%	9
Other (school nurse, youth minister)	4, 2.6%	1, 0.5%	5
Total	152	214	366

The mean age at which participants had their EMC was 11.9 years. However, on average, females had their EMC two years before males. While a significant majority of the female participants (95%) had their EMC when they were at the middle school, just over 77% of males had their EMC during the same period. With regards to the location of the EMC, around 95% were from the east coast of the United States. Regarding the person with whom participants had their EMC, the majority of the female participants (81.8%) reported it to be with their mother, and most male participants (52.6%) indicated it to be with their teacher.

We had two research questions to examine the major topics of discussion by young males and females during the EMC and to assess their perception of the first conversation. Additionally, we examined the difference between male and female adults for the type of discussion topics and perception of their EMC.

EMC- Major Topics of Discussion

Participants selected multiple choices to reflect the topic of the first menstrual conversation (Table 2). The majority of females (81.7%) reported that one of the topics that they talked about during their first menstrual conversation was menstrual hygiene products. This was followed by biological aspects of the menstrual cycle (64.8%), management of menstrual cramps (44.1%), and discussion of how embarrassing, annoying, or restricting menstruation is. On the other hand, a significant percentage of males (64.2%) talked about the biology of menstruation, followed by menstrual products (35.1%), menstrual cramps and its management (21.2%) and how menstruation experience could be embarrassing, annoying, and restricting (19.9%).

A *t*-test was performed to find the difference between males and females. There was a significant difference between men and women in a couple of topics discussed. Expectedly,

females ($M = .81, SD = .35$) were more likely than males ($M = .35, SD = .48$) to discuss menstrual hygiene products, or hygiene management, $t(366) = -10.17, p < .001$. Similarly, females ($M = .19, SD = .39$) were more likely than males ($M = .08, SD = .28$) to discuss about dos and don'ts during menstruation, $t(366) = -2.84, p < .005$. Interestingly, males ($M = .14, SD = .35$) were more likely than their female counterparts ($M = .07, SD = .26$) to joke about menstruation during their EMC, $t(365) = 2.18, p < 0.05$.

Table 2

Topics that American youths talked about in their EMC

Topic of discussion	Sex						t-test/ sig
	Male			Female			
	Count	Mean	SD	Count	Mean	SD	
Biological aspect of menstruation (hormonal changes, phases of menstrual cycle, average blood flow).	97	.63	.48	138	.64	.48	-.16, <i>ns</i>
Menstrual hygiene products, or hygiene management.	53	.35	.48	174	.81	.39	-10.17, <.001***
Discussion about menstrual cramps and its management.	32	.21	.41	94	.44	.5	-4.67, <.001***
Discussion of how embarrassing, or annoying, or restricting menstruation is.	30	.20	.4	60	.28	.45	-1.83, <i>ns</i>
Dos and don'ts during menstruation such as hide menstrual status, or abstain contact with males, modification in diet, or daily routine.	13	.08	.28	41	.19	.39	-2.84, .005**
Made fun of someone, been teased.	9	.06	.24	10	.05	.21	.53, <i>ns</i>

Shared jokes about menstruation.	21	.14	.35	15	.07	.26	2.18, .03*
Menstruation topic accidentally brought up and through other subtle conversation, or through different name/meaning.	25	.16	.37	27	.13	.33	1.03, <i>ns</i>
Others (self-learnt, unsure)	4	.03	.16	2	.01	.1	1.26, <i>ns</i>

Notes: *t*-test is significant at $p < .05$, * $p < .05$, ** $p < .01$, *** $p < .001$, *ns* indicates not significant

EMC Experiences- Cognitive and Emotional Perception

The experience with early menstrual conversation was assessed using a semantic differential scale with 10 questions, five items assessed cognitive perceptions, and five explored emotional ones. The total mean scores were 3.3 ($SD = 0.9$), and 3.1 ($SD = 0.9$) for cognitive (see Table 3) and emotional aspects, respectively (Table 4).

A *t*-test was also performed to ascertain the gender differences in the EMC experiences. The scores imply that males were significantly more likely to report their EMC to be unrelatable ($M = 2.0$, $SD = 1.1$), than females ($M = 3.5$, $SD = 1.1$), $t(361) = -12.92$, $p < .001$. On average, males were significantly more likely to report their EMC to be infrequent ($M = 2.1$, $SD = 1.2$) as compared to females ($M = 2.80$, $SD = 1.14$), $t(354) = -7.38$, $p < .001$. Expectedly, females reported of being relatively more stressed ($M = 2.9$, $SD = 1.23$) than males ($M = 3.44$, $SD = 1.15$) during their EMC, $t(357) = 4.22$, $p < .001$. With respect to how certain or confused they were during their EMC, both male and female participants reported in a similar tone, with a mean score of 2.8 ($S.D = 1.1$) and 2.8 ($S.D = 1.2$), respectively. Overall, there was a statistically significant difference between the way males and females perceived their EMC, cognitively.

Males ($M = 2.76$, $SD = 0.8$) were more likely to report negative cognitive experiences as compared to females ($M = 3.7$, $SD = 0.74$) with $t(351) = -11.18$, $p < .001$.

Table 3

Participant's cognitive perception of EMC

Cognitive Perception	Sex						Total			t-test/ Sig
	Male			Female			Mean	N	SD	
	Mean	N	SD	Mean	N	SD				
Unrelatable-Relatable	1.98	151	1.1	3.51	212	1.12	2.87	363	1.34	-12.92/ <.001***
Untimely-Timely	2.59	148	1.18	3.52	208	1.16	3.14	356	1.26	-7.38/ <.001***
Infrequent-Frequent	2.08	149	1.08	2.8	207	1.14	2.5	356	1.17	-5.98/ <.001***
Important-Very important	3.83	151	1.09	4.8	214	0.56	4.4	365	0.95	-11.16/ <.001***
Not helpful-Very helpful	3.36	151	1.18	3.8	214	1.24	3.62	365	1.23	-3.41/ <.001***
Overall cognitive perception scale	2.76	146	0.8	3.7	207	0.74	3.3	353	0.9	-11.18/ <.001***

Notes- t -test is significant at $p < .05$, *** indicates $p < .001$, ns indicates not significant

Table 4

Participant's emotional perception of EMC

Emotional Perception	Sex						Total			t-test/ Sig
	Male			Female			Mean	N	SD	
	Mean	N	SD	Mean	N	SD				
Stressed-Relaxed	3.44	149	1.15	2.9	210	1.23	3.12	359	1.23	4.22/ <.001***

Confused- Certain	2.78	147	1.12	2.79	210	1.15	2.78	357	1.14	-.08/ <i>ns</i>
Fearful- Confident	3.13	148	1.09	2.82	210	1.20	2.95	358	1.17	2.49/ <i>ns</i>
Unsatisfied- Very Satisfied	3.14	151	1.13	3.57	212	1.2	3.39	363	1.19	-3.47/ <.001***
Ashamed- Unashamed	3.58	147	1.25	3.36	208	1.29	3.45	355	1.28	1.62/ <i>ns</i>
Overall emotional perception scale	3.2	147	0.8	3.1	206	0.9	3.1	353	0.9	1.23/ <i>ns</i>

Notes- *t*-test is significant at $p < .05$, *** indicates $p < .001$, *ns* indicates not significant

In summary, the majority of the female participants conversed about menstrual hygiene products during their EMC, and males on the other hand, conversed about the biology of menstruation. Females were significantly more likely than males to discuss about menstrual hygiene products and dos and don'ts during menstruation. Males were more likely than females to share jokes about menstruation. With respect to the EMC experience, participants were more inclined to report it in a slightly positive tone. Males were statistically less likely to have a positive cognitive experience as compared to females.

Beliefs About and Attitudes Towards Menstruation (BATM)

The following paragraphs will answer the research questions about young males' and females' beliefs and attitudes towards menstruation (BATM) with regard to the five sub-scales namely secrecy, annoyance, prescription and proscription, disability, and pleasant. The mean score of BATM is summarized in table 5. Among all the sub-scales, annoyance had the highest mean score ($M = 3.6$, $SD = 0.5$), followed by pleasant ($M = 3.01$, $SD = 0.5$), disability ($M = 2.6$, $SD = 0.7$), prescriptions and proscriptions ($M = 2.4$, $SD = 0.7$), and secrecy ($M = 2.2$, $SD = 0.5$).

Table 5*Beliefs About and Attitudes Towards Menstruation (BATM)*

Sub-scales	N	Mean	Std. Deviation
Disability	358	2.64	.74
Secrecy	356	2.22	.53
Annoyance	353	3.55	.49
Prescriptions and Proscriptions	357	2.39	.66
Pleasant	357	3.01	.53

A t-test was used to examine the gender differences in BATM sub-scales. Except for the disability sub-scale, a statistically significant difference was found in every other sub-scale between male and female American students (Table 6). Females were significantly more likely to agree that menstruation is annoying ($M = 3.6, SD = 0.5$) than males ($M = 3.5, SD = 0.4$), $t(351) = -3.49, p < .001$. On the other hand, males ($M = 3.1, SD = 0.5$) were more likely than females ($M = 2.9, SD = 0.5$), $t(355) = 4.28, p < .001$ to disagree that menstruation is a pleasant experience.

However, males were significantly more likely to agree ($M = 2.5, SD = 0.5$) that menstruation should be kept secret as compared to females ($M = 2.1, SD = 0.5$), $t(354) = 7.67, p < .001$. Males were significantly more likely ($M = 2.7, SD = 0.5$) than their female peers ($M = 2.1, SD = 0.6$) to agree with certain prescriptions and proscriptions around menstruation, $t(355) = 9.71, p < .001$.

In summary, the BATM mean score implies that on average American students are likely to accept menstruation as annoying and disagree that it is a source of pride for women. Females were significantly more likely than males to perceive menstruation as annoying. Males were more likely than females to disagree that menstruation is a pleasant experience. On the other

hand, males were more likely than their female counterparts to agree to certain restrictions around menstruation. Additionally, males were more likely than females to believe that menstruation be kept secret.

Table 6

BATM among male and female American students

BATM Sub-scales	Male			Female			t	p
	Mean	N	SD	Mean	N	SD		
Disability	2.71	151	0.58	2.59	207	0.83	1.47	0.14, ns
Secrecy	2.45	151	0.46	2.05	205	.52	7.67	<0.001***
Annoyance	3.45	148	0.44	3.63	205	0.52	-3.49	<0.001***
Prescriptions and Proscriptions	2.74	151	0.53	2.13	206	0.62	9.71	<0.001***
Pleasant	3.15	151	0.48	2.91	206	0.54	4.28	<0.001***

Notes- *t*-test is significant at $p < .05$, *** indicates $p < .001$, *ns* indicates not significant

Predictors of BATM

In order to test whether EMC experiences predict young adults' beliefs about and attitudes toward menstruation, a multiple linear regression was performed. The predictor variables include sex, age of the participants at the time of early conversation, perception of EMC (cognitive and emotional), number of topics discussed in EMC (positive/ neutral and negative), and number of interactants (peers and non-peers). The details are presented in Table 16.

BATM annoyance sub-scale. The regression result indicated that the model could explain 8% of the variance predicting participant's BATM in annoying sub-scale, $F(8) = 3.541$,

$R^2 = .081$. Of all the predictors, sex, emotional perception, and type of interactants predicted the annoyance sub-scale of BATM scale. Those who identified as females, who had negative emotional perceptions of EMC and who interacted with fewer number of people older than themselves during their EMC were more likely to consider menstruation as annoying.

BATM secrecy sub-scale. The model explained 21% variance in the secrecy sub-scale of BATM scale with predictors $F(8) = 10.949$, $R^2 = .211$. Among all the predictors, sex and emotional perception explained the secrecy sub-scale of the BATM scale. Participants who identified as males, and whose emotional perception of EMC was negative were more likely to consider menstruation a secret.

BATM prescription and proscriptioin sub-scale. The model explained 24.7% variance in the prescription and proscriptioin sub-scale of BATM with predictors $F(8) = 13.404$, $R^2 = .247$. Among all the predictors, sex, age during EMC, discussion of negative topics, and the type of interactants explained this sub-scale. Those who identified as males, who had their EMC later in their life, discussion of more number of negative topics in their EMC, and interaction with less number of people with similar age during their EMC endorsed more dos and don'ts during menstruation.

BATM pleasant sub-scale. The model explained 10% variance in the pleasant sub-scale of BATM scale with predictors $F(8) = 4.615$, $R^2 = .101$.

Among the eight predictors, sex, and emotional perception predicted the pleasant sub-scale of BATM scale. Being male and negative emotional perception of the EMC explained the high disagreement to menstruation being a pleasant experience.

BATM disability sub-scale. However, none of the predictors included in this model were significant for disability sub-scale of BATM scale. This indicates that the predictors included in this study did not explain participant's disability scale of BATM.

In summary, of all the eight predictors, sex consistently predicted all the BATM sub-scales, except disability. Additionally, negative emotional perception of the EMC, type of interactants, and type of discussion topics also predicted respective sub-scales. Also, none of the predictors explained the disability sub-scale of the BATM scale.

Table 7

Correlation table among sex, age, mean EMC cognitive perception, EMC emotional perception, number of positive/neutral EMC topics, number of negative EMC topics, number of older and same age persons to have EMC with on five subscales of BATM namely disability, secrecy, annoyance, prescription and proscription and pleasant.

	Sex	Age	EMC- Cogniti ve Percept ion	EMC- Emotio nal Percept ion	EMC- Numb er of Positi ve/ Neutr al topics	EMC- Numb er of Negati ve topics	EMC- Number of non- peer interacta nts	EMC- Number of peer interacta nts	Disabil ity	Secre cy	Annoya nce	Prescript ion and Proscript ion	Pleas ant
Sex	1	-.368**	.512**	-0.065	.336**	0.063	.159**	-0.078	-0.077	-.378*	.183**	-.458**	-.221**
Age	-.368**	1	-.200**	0.070	-.113*	-0.010	-.176**	.109*	0.016	.187*	-0.058	.236**	.091
EMC- Cognitiv e Percepti on	.512**	-.200**	1	.467**	.327**	0.003	.217**	-0.026	-.134*	-.353*	-0.006	-.246**	-.224**

EMC- Emotional Perception	- 0.06 5	0.07 0	.467**	1	.171**	-0.056	0.065	0.035	-.135*	- .172*	-1.196**	0.025	- .162**
EMC- Number of Positive/ Neutral topics	.336**	- .113*	.327**	.171**	1	.208**	.271**	-0.004	-.127*	- .279*	0.050	-.237**	- 0.080
EMC- Number of Negative topics	0.06 3	- 0.01 0	0.003	-0.056	.208**	1	0.044	.253**	0.086	- 0.024	0.031	0.024	-.106*
EMC- Number of non- peer interactants	.159**	- .176**	.217**	0.065	.271**	0.044	1	-.177**	-0.031	- 0.086	-0.092	-0.047	-.057
EMC- Number of peer interactants	- 0.07 8	.109*	-0.026	0.035	-0.004	.253**	-.177**	1	0.067	- 0.052	0.022	-0.038	- 0.073

Disability	-0.077	0.016	-.134*	-.135*	-.127*	0.086	-0.031	0.067	1	.388*	.381**	.446**	-0.087
Secrecy	-.378**	.187**	-.353**	-.172**	-.279**	-0.024	-0.086	-0.052	.388**	1	-0.036	.560**	-0.028
Annoyance	.183**	-0.058	-0.006	-.196**	0.050	0.031	-0.092	0.022	.381**	-0.036	1	0.005	-.236**
Prescription and Proscription	-.458**	.236**	-.246**	0.025	-.237**	0.024	-0.047	-0.038	.446**	.560*	0.005	1	-0.007
Pleasant	.221**	-0.091	.224**	.162**	0.080	.106*	0.057	0.073	-0.087	-0.028	-.236**	-0.007	1

Notes: Correlation is significant at $p < 0.05^*$ and $p < 0.01^{**}$. Sex is coded as 0- male and 1- female, EMC perception (cognitive and emotional) as 1 to 5, where 1 indicates negative and 5 positive. Five sub-topics of BATM are coded from 1 to 5, 1 represents strongly disagree and 5 means strongly agree.

Table 8

Multiple regression analysis to examine the predictability of age, sex, mean EMC cognitive perception, EMC emotional perception, number of positive/neutral EMC topics, number of negative EMC topics, number of older and same age persons to have EMC with on three subscales of BATM namely secrecy, annoyance, prescription and proscription.

Variables	Annoyance				Secrecy				Prescription and Proscription			
	<i>B</i>	<i>SE B</i>	Std. β	<i>t-test / sig</i>	<i>B</i>	<i>SE B</i>	Std. β	<i>t-test / sig</i>	<i>B</i>	<i>SE B</i>	Std. β	<i>t-test / sig</i>
Sex	.163	.073	.163	2.236, .026*	-.316	.072	-.297	-4.402, <0.001***	-.556	.088	-.418	-6.312, <0.001 ***
Age	.000	.012	.001	.013, <i>ns</i>	.021	.012	.098	1.819, <i>ns</i>	.028	.014	.105	1.986, .048*
EMC-Cognitive Perception	-.003	.043	-.005	-.064, <i>ns</i>	-.047	.042	-.078	-1.102, <i>ns</i>	.002	.052	.002	.032, <i>ns</i>
EMC-Emotional Perception	-.105	.036	-.194	-2.917, .004**	-.075	.035	-.130	-2.118, .035*	.013	.043	.018	.309, <i>ns</i>
EMC-Number of Positive/ Neutral topics	.014	.032	.026	.422, <i>ns</i>	-.058	.032	-.102	-1.820, <i>ns</i>	-.059	.039	-.084	-1.522, <i>ns</i>
EMC-Number of Negative topics	-.006	.034	-.011	-.188, <i>ns</i>	.026	.033	.042	.806, <i>ns</i>	.090	.040	.115	2.255, .025*

EMC-Number of non-peer interactants	-	.037	-.125	-2.166, .031*	.004	.036	.005	.100, <i>ns</i>	.026	.044	.031	.598, <i>ns</i>
EMC-Number of peer interactants	.009	.042	.013	.225, <i>ns</i>	-.071	.040	-.093	-1.768, <i>ns</i>	-.100	.049	-.104	-2.032, .043*
F	3.541, $p < .001^{**}$				10.949, $p < .001^{***}$				13.404, $p < .001^{***}$			
R ²	.081				.211				.247			
Adjusted R ²	.058				.192				.229			

Notes- * $p < .05$, ** $p < .01$, *** $p < .001$, *ns* indicates not significant.

Sex is dummy coded as 0- male and 1- female, EMC perception (cognitive and emotional) as 1 to 5, where 1 indicated negative and 5 positive. EMC- Number of Positive/ Neutral, negative topics answered by the participants are counted from 0 to highest number.

EMC- Number of interactants (peer and non-peer) answered by the participants are counted from 0 to highest number. BATM 5 sub-scales is coded from 1 to 5, where 1 represents strongly disagree, 5 represents strongly agree.

Table 9

Multiple regression analysis to examine the predictability of age, sex, mean EMC cognitive perception, EMC emotional perception, number of positive/neutral EMC topics, number of negative EMC topics, number of older and same age persons to have EMC with on two subscales of BATM namely pleasant and disability.

Variables	Pleasant				Disability			
	<i>B</i>	<i>SE B</i>	Std. β	<i>t-test / sig</i>	<i>B</i>	<i>SE B</i>	Std. β	<i>t-test / sig</i>
Sex	-.239	.078	-.220	-3.051, .002**	-.082	.112	-.054	-.735, <i>ns</i>
Age during EMC	.008	.012	.035	.613, <i>ns</i>	.000	.018	-.002	-.028, <i>ns</i>
Mean EMC-Cognitive Perception	-.028	.046	-.045	-.600, <i>ns</i>	-.031	.066	-.036	-.467, <i>ns</i>
Mean EMC-Emotional Perception	-.101	.038	-.172	-2.634, .009**	-.081	.055	-.099	-1.469, <i>ns</i>
EMC-Number of Positive/ Neutral topics	.045	.035	.078	1.310, <i>ns</i>	-.076	.049	-.095	-1.541, <i>ns</i>
EMC-Number of Negative topics	-.061	.035	-.096	-1.736, <i>ns</i>	.085	.051	.096	1.662, <i>ns</i>

EMC-Number of persons older than self	-.026	.039	-.038	-.666, <i>ns</i>	.006	.056	.006	.103, <i>ns</i>
EMC-Number of persons similar age	-.055	.044	-.069	-1.249, <i>ns</i>	.046	.063	.043	.741, <i>ns</i>
F	4.615, <.001				1.995, <i>p</i> <.046*			
R ²	.101				.046			
Adjusted R ²	.079				.023			

Notes- **p* < .05, ** *p* < .01, *** *p* < .001

Sex is dummy coded as 0- male and 1- female, EMC perception (cognitive and emotional) as 1 to 5, where 1 indicated negative and 5 positive. EMC- Number of Positive/ Neutral, negative topics answered by the participants are counted from 0 to highest number.

EMC- Number of interactants (peer and non-peer) answered by the participants are counted from 0 to highest number. BATM 5 sub-scales is coded from 1 to 5, where 1 represents strongly disagree, 5 represents strongly agree.

Suggestions for Future Menstrual Education Session

The last research question concerns young adults' suggestions for designing a session on EMC with respect to the gender composition among the participants, facilitator, location for the session, total duration, topics to be emphasized, and medium and process of the delivery. In the following section, participants' suggestions for designing an effective menstrual education session for early adolescents will be reported.

With regards to the gender composition of the intended education session, majority of the participants (n= 297, 81.6%) reported that they would choose to have both males and females in the session together (Table 7). A fraction of them (n= 66, 17.9%) reported that they would design a menstrual education session in a class with just female participants.

Table 10

American youth's recommendation for the audience of the menstrual education session

Audience	Frequency	Percent	Valid Percent	Cumulative Percent
All students, males and females together	297	80.7	81.6	81.6
Females only	66	17.9	18.1	99.7
Males only	1	.3	.3	100.0
Total	364	98.9	100.0	
Missing or unreported	4	1.1		
	368	100.0		

In response to whom they would want the menstrual education session to be facilitated by, over half of the participants reported it to be their female health teacher (n=198, 54.4%), followed by a school nurse (n= 53, 14.6%), someone from respective county health department (n= 34, 9.3%) (see Table 8). The rest of the participants chose an anonymous health teacher (n=

26, 7.1%), co-teaching by an adolescent and a teacher (n= 26, 7.1%), a young advocate (n= 23, 7.1%), and a male teacher (n= 4, 1.1%).

Table 11

American youth's recommendation for the facilitator of the menstrual education session

Facilitator	Frequency	Percent	Valid Percent	Cumulative Percent
A male health teacher	4	1.1	1.1	1.1
A female health teacher	198	53.8	54.4	55.5
A school nurse	53	14.4	14.6	70.1
A person from the county health department	34	9.2	9.3	79.4
An anonymous health teacher	26	7.1	7.1	86.5
A young advocate	23	6.3	6.3	92.9
Someone who is an adolescent themselves, partially facilitated by a teacher.	26	7.1	7.1	100.0
Total	364	98.9	100.0	
Missing or unreported	4	1.1		
Total	368	100.0		

With respect to the location for where the participants would conduct their menstrual education session, nearly two-thirds (n= 218, 63.9%) of them would choose a school classroom (see Table 9). Nearly a fourth (n= 65, 19.1%) of the total participants would want it to be in a large area such as a lecture hall, a university classroom/auditorium, or a library. While 9.1% (n = 31) of the participants chose a neutral space such as a gym or a town hall, 3.5% (n = 12) would

plan the session in a private room. Few of the participants (n = 7, 1.9%) chose digital platforms to conduct a menstrual education session for young adolescents.

Table 12

American youth's recommendation for the location of the menstrual education session

Location	Frequency	Percent	Valid Percent	Cumulative Percent
School classroom	218	58.6	63.9	63.9
Large space (lecture hall, library, university)	65	17.5	19.1	83.0
Neutral space (townhall, gym, health clinic)	31	8.3	9.1	92.1
Private and safe space (home, private room)	12	3.2	3.5	95.6
Digital platforms	7	1.9	2.1	97.7
Other (unsure, biology)	8	2.2	2.3	100.0
Total	341	91.7	100.0	
Missing or unreported	31	8.3		
	372	100.0		

The participants reported the major topics they would address in the intended menstrual education session (Table 10). While 27.6% (n= 168) of the participants would choose to explain the biology of menstruation, 23.8% (n=145) of them would want to include practical management of menstruation in the session. This is followed by information on symptoms prior to and during menstruation (n=73, 12.0%), addressing shame and stigma around the topic (n=68, 11.2%). Just over 6% (n=68) want to address topics such as the importance of self-care and support during the period. Another 6.2% (n=68) intend to address sex education topics such as

safe sex, contraception, consent, and so on. Finally, 11% (n= 67) mentioned general unspecific topics such as periods, health, and puberty.

Table 13

American youth's recommendation for the topics to be covered in the menstrual education session

Topics	Responses		Percent of Cases
	N	Percent	
Biological information (hormonal changes)	168	27.6	50.3
Information about pre and menstrual symptoms (breast pain, mood swings, cramps, nausea, bloating)	73	12.0	21.9
Information on practical management (use of menstrual products, cramps, nausea)	145	23.8	43.4
Information on self-care and support (seeking help or helping others)	38	6.2	11.4
Information on sexual health (safe sex, STI, birth control, pregnancy)	38	6.2	11.4
Addressing shame and stigma around menstruation (open communication)	68	11.2	20.4
All topics (health, puberty)	67	11.0	20.1
Other (future, financial education, unsure)	12	2.0	3.6
	609	100.0	182.3

Among the major topics listed above, participants also reported one topic they would emphasize in the menstrual education session (see Table 11). One-fourth (n= 78, 24.4%) of the

participants reported that they would give extra time to share biological information, followed by 20% (n=64) of those who would focus on addressing myths, stigma, and opening communication channels around menstruation. Over 18% of the participants (n=59) reported that they would emphasize practical management of menstruation, followed by information on pre and menstrual symptoms (n=23, 7.2%). Just over 5% of the participants would emphasize linking menstruation to reproductive and sexual health (n=18, 5.6%). Again, 39 participants (12.2%) reported some non-specific generic topics such as health and puberty.

Table 14

American youth's recommendation for the topics to be emphasized in the menstrual education session

Emphasis topic	Frequency	Percent	Valid Percent	Cumulative Percent
Biological Information (hormonal changes)	78	21.0	24.4	24.4
Information on pre-menstrual and menstrual symptoms (breast pain, mood swings, cramps, nausea, bloating)	23	6.2	7.2	31.6
Practical management (use of menstrual products, cramps, nausea).	59	15.9	18.4	50.0
Addressing myths, stigma (open the communication channel and normalize period)	64	17.2	20.0	70.0
Linking menstruation to reproductive and sexual health such as safe sex, birth control options, consent, coercion.	18	4.8	5.6	75.6
Care, help and support (self-care, seeking help or helping others during menstruation, and how to feel better)	19	5.1	5.9	81.6

All (health, puberty)	39	10.5	12.2	93.8
Other (Normalcy, county health department)	20	5.4	6.3	100.0
Total	320	86.0	100.0	
Missing or Unreported	52	14.0		
	372	100.0		

In regard to the media that they would use to deliver the menstrual education session, 41.2% (n= 149) of the participants chose educational videos, including documentaries and film clips (see Table 12). Over a third of the participants (n=123, 34%) would use a participatory learning approach such as group discussion, experience sharing, and games. The remaining participants (n=43, 11.9%) reported that they would choose to demonstrate menstrual products in the session. Just over 7% of the participants (n=28) chose to use textbooks, arts, and advertisement pieces. Those who answered ‘other’ (n= 19, 5.2%) would either choose a combination of educational videos, participatory learning, demonstration of menstrual products, or all the media options, including a lecture with PowerPoint.

Table 15

American youth’s recommendation for media type for the menstrual education session

Media	Frequency	Percent	Valid Percent	Cumulative Percent
Textbooks, printed materials, arts, advertisement pieces.	28	7.6	7.7	7.7
Educational videos, including documentaries, film clips	149	40.5	41.2	48.9

Participatory learning including group discussion, experience sharing and games	123	33.4	34.0	82.9
Demonstration of actual products	43	11.7	11.9	94.8
Other (unsure, give free t-shirt)	19	5.2	5.2	100.0
Total	362	98.4	100.0	
Missing or unreported	6	1.6		
	368	100.0		

The majority of the participant's (n = 228, 62.8%) suggestions for the delivery method for the menstrual education session include a combination of lectures, demonstrations and participatory activities such as games, storytelling and group activities (see Table 13). Just over 20% (n = 74) suggested using lectures and demonstrations, remaining answered either using participatory activities (9.4%) or lecture only (7.4%).

Table 16

American youth's recommendation for the delivery method for the menstrual education session

Method of delivery	Frequency	Percent	Valid Percent	Cumulative Percent
Lectures only	27	7.3	7.4	7.4
Lectures and demonstrations	74	20.1	20.4	27.8
Participatory activities such as games, storytelling and other group activities	34	9.2	9.4	37.2
A combination of all the above methods.	228	62.0	62.8	100.0

Total	363	98.6	100.0
Missing or unreported	5	1.4	
	368	100.0	

With regards to how much time they would dedicate for the intended menstrual education session, 67.5% (n = 245) answered it to between 30 minutes to one hour, 15.7% (n = 57) chose 1-2 hours for the session (Table 16). Under 15% (n = 51) would choose to deliver the session in less than 30 minutes and 2.8% (n = 10) would dedicate more than 2 hours for the menstrual education session.

Table 17

American youth's recommendation for duration of the menstrual education session

Time	Frequency	Percent	Valid Percent	Cumulative Percent
Less than 30 minutes	51	13.9	14.0	14.0
30 minutes- 1 hour	245	66.6	67.5	81.5
1 hour- 2 hours	57	15.5	15.7	97.2
More than 2 hours	10	2.7	2.8	100.0
Total	363	98.6	100.0	
Missing or unreported	5	1.4		
	368	100.0		

In summary, the participants overwhelmingly suggested a gender-inclusive classroom setting for a future menstrual education session. Over half of the participants recommended that

a female health teacher be the facilitator in the session. The second most recommended facilitator was a school nurse. There was a unique suggestion of combining a teacher and a similar-age peer as a facilitator. In terms of location, nearly two-thirds of them suggested the session to be inside a school classroom.

In the menstrual education session, the top three topics that the participants suggested to discuss include biological information; addressing myths, opening communication channels around menstruation; and practical management of menstruation. The participants recommended a variety of resources and methods of delivery to be used in the menstrual education session. They listed using educational videos such as documentaries and film clips, and a combination of lectures, demonstrations, and participatory activities such as games, storytelling, and group activities. Finally, a significant number of participants recommended the session to be for 30 - 60 minutes.

CHAPTER IV: DISCUSSION

The current study examined American youth's beliefs about and attitudes towards menstruation (BATM) and assessed how experiences of early menstrual communication (EMC) impact it. This section elaborates on the findings of the study. Specifically, we will examine how the findings of the current study situate in the existing literature and contribute to the literature. Finally, the implications, limitations, and suggestions for future study will be discussed.

In the current study, the mean age that the participants reported having their EMC was 11.9 years, the mean age for females was 11.1 years, and for males, it was 13 years. Whereas the average median age at menarche for US girls is 12.25 years (Biro et al., 2018). The findings of this study suggest that, on average, girls have their EMC before the age of menarche, which is in alignment with the findings by Schmitt et al. (2021), where girls had some basic knowledge of menstruation prior to menarche. This might call for introducing a formal discussion about menarche at elementary schools. Herbert et al. (2016) assert that school health education should make sure that students receive information about pubertal health information before the onset of menarche and associated body changes.

On average, the male participants of the current study converse about menstruation almost two years later than their female counterparts. This finding is similar to the conclusions drawn by two studies that boys are less likely than girls to talk about puberty and sexual development topics (Erchull, 2020), and even if they talk about those topics, they do so at a later age (Omar et al., 2003).

Regarding the person with whom participants had their EMC, the majority of the female participants and a third of the male participants reported it to be with their mother. Participants across many US demographics report their mothers to be the primary source of information

about sexual health (Marván & Alcalá-Herrera, 2019). A significant percentage of males in this study described their EMC with their teachers. This is expected as there are national guidelines that recommend school boards to introduce the menstruation process to students by age 12 (SIECUS, 2004; UNESCO, 2009).

Most participants in the current study reported a variety of topics discussed in their early menstrual conversation, few examples include menstrual hygiene products, the biology of menstruation, and menstruation being embarrassing, annoying, and restricting. Girls in previous studies have reported discussing the biological aspect of menstruation in school but not receiving practical guidance (Schmitt et al., 2021). In the current study, we prompted the participants to choose from a list of their first menstrual conversation topics, this could have nudged them to better recall all the topics they talked about, even if it had been a superficial discussion.

In the current study, we found many gender differences in the participant's EMC experiences. Males were twice as likely than females to share jokes about menstruation during their EMC. Our result aligns with previous studies in developing and developed countries that show boys joke about menstruation in their conversations to embarrass or tease girls (Allen et al., 2011; Benshaul-Tolonen et al., 2020). The current study found that, on average, both males and females were confused during their early menstrual conversation. Specifically, females reported being stressed, confused, and fearful during their early menstrual conversation. This is consistent with the findings of previous studies that conversation about menstruation is full of negative experiences such as confusion, stress, fear, and embarrassment (Fennie et al., 2022). We also found that males were more likely to report their early menstrual conversation as unrelatable and infrequent. Allen et al. (2011) found that boys felt confused and ignorant during their first encounter with menstruation.

The evidence from the literature and our current findings demonstrates many young adults consider menstruation as a stigma. The finding of the current study points out that menstruation perceptions meet three categories of stigma types stated by Goffman (1963), namely abomination, a blemish in one's character, and tribal stigma. A majority of the participants in the current study believed that menstruation is annoying. This result indicates that menstruation is seen as bothersome, an event that they would rather reject or be disgusted by. This belief about menstruation reported by participants fulfills the abomination category. Male participants in this study were more likely than females to believe that menstruation be kept secret and that any trace or hint of it should be hidden from men and the public. Endorsing the secretive narrative around menstruation indicates that men believe that menstruation is a blemish in women's character, and they will be better off by hiding its presence. On average, participants believed that menstruation is disabling, an event that is discomforting and keeps women from normal activities. Finally, male participants were more likely to endorse certain restrictions around menstruation, things that women must and must not do. These findings suggest that participants believed that menstruation is an event unique to women, and that men are at an advantage of not menstruating. Women were bearing the brunt of discomforting events and should abide by certain restrictions during menstruation. These beliefs suggest that menstruation is a uniquely female experience and so a tribal identity for them. The beliefs about and attitudes toward menstruation reported by participants imply that they internalized the social stigma around menstruation.

The current study found that participants who had a negative emotional perception (such as those who felt stressed, confused, fearful, ashamed, and unsatisfied) during their early menstrual conversation were more likely to consider menstruation annoying and a secretive

event those who had positive emotional perception. Additionally, those who conversed with fewer non-peer people (those older than them) during their early conversation were more likely to consider menstruation as annoying. Participants who engaged in menstrual conversation later in their lives and those who interacted with a smaller number of people of similar age believed in restrictions around menstruation. Drawing from Goffman's stigma theory, previous studies, and current study's findings, we can conclude that menstrual stigma is instilled in teenagers through early experiences of social interaction, type and a number of interactants, and timing of the first interaction about menstruation. Thus, we believe it is important for pre-teens to have positive early menstrual conversation experiences to start creating a positive cultural change around menstruation and reducing the stigma around it.

Based on our finding we recommend that to address menstrual stigma, relevant stakeholders like schools, and families should consider introducing the menstrual topic early in a child's life. Our study shows that pre-teens start engaging in menstrual conversation by age 9. So, menstrual conversation can be initiated and facilitating in schools and homes beginning at age 9. Our recommendation is in line with those by Crockett et al. (2019) who recommend that information about pubertal changes be provided early starting in fourth grade (age 9). The pre-teens should be made to feel relaxed and confident during the conversation. In order to ensure positive experiences, the early menstrual conversations should be held in a predictable way, satisfying their curiosities and questions about the biology of menstruation, myths, and taboos about menstruation. Wherever possible, the menstrual conversation should be initiated with multiple people (peer and non-peer) in different setting such as schools and families. Additionally, pre-teens should be given a space and an opportunity to ask and listen to the experiences of same-age peers or siblings and facilitate menstrual conversation among them.

Crockett et al. (2019) recommend that information about pubertal changes can be presented using peer activities, and should be provided in multiple social contexts namely schools and homes. Allen et al. (2011) also assert that to help young adolescents develop positive view of menstruation, communication should happen between male and female peers.

Importantly, participants suggested that menstrual communication sessions should be inclusive, involving both males and females in the classroom. Their recommendation for facilitators includes female health teachers and school nurses. Interestingly, they also suggested that menstrual education session be co-taught by an adolescent and a teacher. This implies that participants are keen on conversing and learning from both peer and non-peer figures. In align with our findings, menstrual session can be an opportunity to expose adolescents to people from different age groups and variable authority. This can contribute to positive early menstrual conversation experiences among youth and thus resulting in a reduced likelihood of stigmatizing attitudes later in life.

The majority of the participants suggested a school classroom to be the best place for the menstrual session. Participants also recommended that early menstrual sessions should focus on the biology of menstruation (what is menstruation, why does it happen), should clarify myths about menstruation and aim to open communication channels around the topic. Participants also recommended the use of educational videos (documentaries and films) and a participatory learning approach (such as group discussion, experience sharing, and games) in menstrual education sessions.

Limitations and Recommendations

Given the limitation in time, the current study employed convenience sampling. We could not ensure equal representation of different demographics such as race, religion, cultural

practices, geographical location. Future studies could be done among a larger and more representative sample to elucidate how demographics such as age, geographical location, religion, and cultural practices shape early menstrual conversation experiences. With sufficient sub-group representation these demographics can be tested to find out if they predict the beliefs and attitudes toward menstruation.

The self-reporting of a conversation that happened years ago could be less efficient in generating accurate responses. Conversing about menstruation is a unique individual experience that happens over a period of time. So, our EMC instrument might have missed capturing the complex and dynamic nature of the menstrual conversation. However, we encouraged the participants to remember their first memorable exchanges about menstruation which could involve verbal or non-verbal exchanges and can be active or passive ones. Such specific requirements and cues could nudge them to remember their memorable conversation with good details. Additionally, the reliability of EMC instrument was found to be high. Future studies might incorporate a mixed-method design to capture qualitative experiences of early menstrual conversation and current beliefs and attitudes towards menstruation.

We also acknowledge the occurrence of social desirability bias among the participants in our study. Menstruation is a sensitive topic, and the survey questions about early menstrual conversation experience and beliefs about and attitudes towards menstruation require self-report of highly personal experience. So, it is possible that participants may have either underreported socially undesirable attributes and/or may have overreport the desirable ones.

Finally, the recommendation provided by the participants in this study for the future menstrual education session should be evaluated with caution. The suggestions from the participants were sought using a set of close-ended and three open-ended questions, which could

have limited the creativity and variety of ideas that participants wanted to suggest. Also, almost all the participants were young American undergraduate students, so their ideas and suggestions might not completely reflect the evidence around the menstrual education session. Their responses are naturally impacted by and limited to the kind of experiences that young adults had in the past. Future studies should consider small group discussions, interviews or participatory research approach to explore suggestions from early adolescents and young people.

Conclusion

Young adults' current belief about and attitudes toward menstruation is influenced by early social interactions. We examined how different experiences of early menstrual conversation predict beliefs about and attitudes toward menstruation among American youths. The study findings establish that participants who had their early menstrual conversation later in their life, who talked about menstruation with fewer people (peer and non-peer), and who had negative emotional perception (confused, stressed, ashamed) of the early menstrual conversations predicted their current belief and attitude towards menstruation. These findings suggest that introducing menstrual conversation early in a child's life (preferably at or after 9 years) in a predictable way, increasing opportunities to talk about menstruation with multiple people (peer and non-peer) in homes and schools, satisfying their curiosities, and making them feel relaxed and confident during the conversation can contribute to positive beliefs and attitudes towards menstruation.

Future research examining how early menstrual communication predicts the beliefs and attitudes towards menstruation should consider a better representation of participants from different demographics. Additionally, studies can incorporate mixed-method design to capture the complex, and dynamic nature of early menstrual communication and its impact on current

beliefs about menstruation. Finally, future studies could utilize a participatory research approach to actively involve young people in designing an effective early menstrual communication session.

REFERENCES

- Agnew, S., & Gunn, A. C. (2019). Students' engagement with alternative discursive construction of menstruation. *Health Education Journal*, 78(6), 670–680.
<https://doi.org/10.1177/0017896919835862>
- USA Hello. (2022, June 10). *A guide to the US education levels*. USAHello.
Retrieved February 9, 2023, from <https://usahello.org/education/children/grade-levels/#gref>
- Airhihenbuwa, C. O., Ford, C. L., & Iwelunmor, J. I. (2014). Why Culture Matters in Health Interventions: Lessons From HIV/AIDS Stigma and NCDs. *Health Education & Behavior*, 41(1), 78–84. <https://doi.org/10.1177/1090198113487199>
- Alcalde, M. C., & Quelopana, A. M. (2013). Latin American immigrant women and intergenerational sex education. *Sex Education*, 13(3), 291–304.
<https://doi.org/10.1080/14681811.2012.737775>
- Alharbi, K. K., Alkharan, A. A., Abukhamseen, D. A., Altassan, M. A., Alzahrani, W., & Fayed, A. (2018). Knowledge, readiness, and myths about menstruation among students at the Princess Noura University. *Journal of Family Medicine and Primary Care*, 7(6), 1197–1202. https://doi.org/10.4103/jfmprc.jfmprc_279_18
- Allen, K. R., Kaestle, C. E., & Goldberg, A. E. (2011). More Than Just a Punctuation Mark: How Boys and Young Men Learn About Menstruation. *Journal of Family Issues*, 32(2), 129–156. <https://doi.org/10.1177/0192513X10371609>
- Alliance for Period Supplies. (2023, March 17). *Period poverty*. Alliance for Period Supplies - It's that time. *. Retrieved November 16, 2022, from <https://allianceforperiodsupplies.org/period-poverty/>

- Allison, C. M., & Hyde, J. S. (2013). Early Menarche: Confluence of Biological and Contextual Factors. *Sex Roles, 68*(1), 55–64. <https://doi.org/10.1007/s11199-011-9993-5>
- Amaral, M. C. E., Hardy, E., & Hebling, E. M. (2011). Menarche among Brazilian women: Memories of experiences. *Midwifery, 27*(2), 203–208. <https://doi.org/10.1016/j.midw.2009.05.008>
- Anikwe, C. C., Mamah, J. E., Okorochukwu, B. C., Nnadozie, U. U., Obarezi, C. H., & Ekwedigwe, K. C. (2020). Age at menarche, menstrual characteristics, and its associated morbidities among secondary school students in Abakaliki, southeast Nigeria. *Heliyon, 6*(5), e04018. <https://doi.org/10.1016/j.heliyon.2020.e04018>
- Airhihenbuwa, C. O., Ford, C. L., & Iwelunmor, J. I. (2014). Why Culture Matters in Health Interventions: Lessons From HIV/AIDS Stigma and NCDs. *Health Education & Behavior, 41*(1), 78–84. <https://doi.org/10.1177/1090198113487199>
- Barrington, D. J., Robinson, H. J., Wilson, E., & Hennegan, J. (2021). Experiences of menstruation in high income countries: A systematic review, qualitative evidence synthesis and comparison to low- and middle-income countries. *PLoS One, 16*(7), e0255001. <https://doi.org/10.1371/journal.pone.0255001>
- Benshaul-Tolonen, A., Aguilar-Gomez, S., Batzer, N. H., Cai, R., & Nyanza, E. C. (2020). Period teasing, stigma and knowledge: A survey of adolescent boys and girls in Northern Tanzania. *PLoS One, 15*(10), e0239914. <https://doi.org/10.1371/journal.pone.0239914>
- Biro, F. M., Pajak, A., Wolff, M. S., Pinney, S. M., Windham, G. C., Galvez, M. P., Greenspan, L. C., Kushi, L. H., & Teitelbaum, S. L. (2018). Age of Menarche in a Longitudinal US Cohort. *Journal of Pediatric and Adolescent Gynecology, 31*(4), 339–345. <https://doi.org/10.1016/j.jpag.2018.05.002>

- Bobel, C. (2019). Introduction: What a Girl Needs In C. Bobel (Ed.), *The Managed Body: Developing Girls and Menstrual Health in the Global South* (pp. 1–42). Springer International Publishing. https://doi.org/10.1007/978-3-319-89414-0_1
- Bobel, C., Winkler, I. T., Fahs, B., Hasson, K. A., Kissling, E. A., & Roberts, T.-A. (Eds.). (2020). *The Palgrave Handbook of Critical Menstruation Studies*. Springer Singapore. <https://doi.org/10.1007/978-981-15-0614-7>
- Bos, A. E. R., Pryor, J. B., Reeder, G. D., & Stutterheim, S. E. (2013). Stigma: Advances in Theory and Research. *Basic and Applied Social Psychology*, 35(1), 1–9. <https://doi.org/10.1080/01973533.2012.746147>
- Boston Women's Health Book Collective. (1976). *Our bodies, ourselves: A book by and for women*. Simon & Schuster.
- Brantelid, I. E., Nilvér, H., & Alehagen, S. (2014). Menstruation During a Lifespan: A Qualitative Study of Women's Experiences. *Health Care for Women International*, 35(6), 600–616. <https://doi.org/10.1080/07399332.2013.868465>
- Britton, C. J. (1996). Learning about “the curse”: An anthropological perspective on experiences of menstruation. *Women's Studies International Forum*, 19(6), 645–653. [https://doi.org/10.1016/S0277-5395\(96\)00085-4](https://doi.org/10.1016/S0277-5395(96)00085-4)
- Brooks-Gunn, J., & Ruble, DianeN. (1986). Men's and women's attitudes and beliefs about the menstrual cycle. *Sex Roles*, 14(5–6). <https://doi.org/10.1007/BF00287580>
- Cardoso, L. F., Scolese, A. M., Hamidaddin, A., & Gupta, J. (2021). Period poverty and mental health implications among college-aged women in the United States. *BMC Women's Health*, 21(1), 14. <https://doi.org/10.1186/s12905-020-01149-5>

- Carneiro, M. M. (2022). The hidden tales menstruation may tell: Time to break the silent spell. *Women & Health*, 62(4), 273–275. <https://doi.org/10.1080/03630242.2022.2070970>
- Centers for Disease Control and Prevention. (2016). *Results from the School Health Policies and Practices Study 2016*. U.S. Department of Health and Human Services, CDC.
- Chandra-Mouli, V., & Patel, S. V. (2017). Mapping the knowledge and understanding of menarche, menstrual hygiene and menstrual health among adolescent girls in low- and middle-income countries. *Reproductive Health*, 14(1), 30. <https://doi.org/10.1186/s12978-017-0293-6>
- Chang, Y.-T., Hayter, M., & Lin, M.-L. (2012). Pubescent male students' attitudes towards menstruation in Taiwan: Implications for reproductive health education and school nursing practice. *Journal of Clinical Nursing*, 21(3–4), 513–521. <https://doi.org/10.1111/j.1365-2702.2011.03700.x>
- Chaudoir, S. R., Earnshaw, V. A., & Andel, S. (2013). “Discredited” Versus “Discreditable”: Understanding How Shared and Unique Stigma Mechanisms Affect Psychological and Physical Health Disparities. *Basic and Applied Social Psychology*, 35(1), 75–87. <https://doi.org/10.1080/01973533.2012.746612>
- Chebii, S. J. (2018). Menstrual Issues: How Adolescent Schoolgirls in the Kibera Slums of Kenya Negotiate their Experiences with Menstruation. *Women's Reproductive Health*, 5(3), 204–215. <https://doi.org/10.1080/23293691.2018.1490534>
- Cook, J. E., Arrow, H., & Malle, B. F. (2011). The Effect of Feeling Stereotyped on Social Power and Inhibition. *Personality and Social Psychology Bulletin*, 37(2), 165–180. <https://doi.org/10.1177/0146167210390389>

- Cooper, S. C., & Koch, P. B. (2007). “Nobody Told Me Nothin’”: Communication About Menstruation Among Low-Income African American Women. *Women & Health, 46*(1), 57–78. https://doi.org/10.1300/J013v46n01_05
- Costos, D., Ackerman, R., & Paradis, L. (2002). Recollections of Menarche: Communication Between Mothers and Daughters Regarding Menstruation. *Sex Roles, 46*(1), 49–59. <https://doi.org/10.1023/A:1016037618567>
- Crawford, B. J., & Waldman, E. G. (2018). The Unconstitutional Tampon Tax. *University of Richmond Law Review, 53*, 439.
- Crockett, L. J., Dearnorff, J., Johnson, M., Irwin, C., & Petersen, A. C. (2019). Puberty Education in a Global Context: Knowledge Gaps, Opportunities, and Implications for Policy. *Journal of Research on Adolescence, 29*(1), 177–195. <https://doi.org/10.1111/jora.12452>
- ECU BY THE NUMBERS* / facts.ecu.edu / *ECU*. (n.d.). Retrieved August 22, 2022, from <https://facts.ecu.edu/>
- Ellis, A., Haver, J., Villasenor, J. O. N., Parawan, A., Venkatesh, M., Freeman, M. C., & Caruso, B. A. (2016). WASH challenges to girls' menstrual hygiene management in Metro Manila, Masbate, and South Central Mindanao, Philippines. *Waterlines, 306-323*.
- Erchull, M. J. (2020). “You Will Find Out When the Time Is Right’’: Boys, Men, and Menstruation. *The Palgrave Handbook of Critical Menstruation Studies, 395-407*.
- Erchull, M. J. (2020). “You Will Find Out When the Time Is Right’’: Boys, Men, and Menstruation. *The Palgrave Handbook of Critical Menstruation Studies, 395-407*.
- Fennie, T., Moletsane, M., & Padmanabhanunni, A. (2022). Adolescent girls’ perceptions and cultural beliefs about menstruation and menstrual practices: A scoping review. *African*

- Journal of Reproductive Health*, 26(2), 88–105.
<https://doi.org/10.29063/ajrh2022/v26i2.9>
- Field-Springer, K., Randall-Griffiths, D., & Reece, C. (2018). From Menarche to Menopause: Understanding Multigenerational Reproductive Health Milestones. *Health Communication*, 33(6), 733–742. <https://doi.org/10.1080/10410236.2017.1306910>
- Frank, S. E. (2020). Queering Menstruation: Trans and Non-Binary Identity and Body Politics. *Sociological Inquiry*, 90(2), 371–404. <https://doi.org/10.1111/soin.12355>
- Future of Sex Education Initiative (FoSE). (2012). National sexuality education standards: Core content and skills, K-12 (A special publication of the Journal of School Health). Retrieved from <https://web.archive.org/web/20160314044936/http://futureofsexeducation.org/documents/josh-fose-standards-web.pdf>
- Geller, S. E., Harlow, S. D., & Bernstein, S. J. (1999). Differences in menstrual bleeding characteristics, functional status, and attitudes toward menstruation in three groups of women. *Journal of Women's Health & Gender-Based Medicine*, 8(4), 533–540. <https://doi.org/10.1089/jwh.1.1999.8.533>
- Goffman, E. (1963). *Stigma: Notes on the Management of Spoiled Identity*. Touchstone.
- Greenberg, J., Koole, S. L., & Pyszczynski, T. A. (2004). *Handbook of Experimental Existential Psychology*. Guilford Press.
- Gundi, M., & Subramanyam, M. A. (2019). Menstrual health communication among Indian adolescents: A mixed-methods study. *PLoS One*, 14(10), e0223923. <https://doi.org/10.1371/journal.pone.0223923>

- Gundi, M., & Subramanyam, M. A. (2020). Curious eyes and awkward smiles: Menstruation and adolescent boys in India. *Journal of Adolescence*, 85, 80–95.
<https://doi.org/10.1016/j.adolescence.2020.09.013>
- Guttmacher Institute. (2022, August 30). Sex and HIV education. Retrieved August 28, 2022, from <https://www.guttmacher.org/state-policy/explore/sex-and-hiv-education>
- Hall, K. S., Manu, A., Morhe, E., Harris, L. H., Loll, D., Ela, E., Kolenic, G., Dozier, J. L., Challa, S., Zochowski, M. K., Boakye, A., Adanu, R., & Dalton, V. K. (2018). Development and Validation of a Scale to Measure Adolescent Sexual and Reproductive Health Stigma: Results From Young Women in Ghana. *The Journal of Sex Research*, 55(1), 60–72. <https://doi.org/10.1080/00224499.2017.1292493>
- Hatzenbuehler, M. L. (2009). How does sexual minority stigma “get under the skin”? A psychological mediation framework. *Psychological Bulletin*, 135(5), 707–730.
<https://doi.org/10.1037/a0016441>
- Hawkey, A. J., Ussher, J. M., & Perz, J. (2020). “I Treat My Daughters Not Like My Mother Treated Me”: Migrant and Refugee Women’s Constructions and Experiences of Menarche and Menstruation. *The Palgrave Handbook of Critical Menstruation Studies*, 99-113.
- Hennegan, J., Shannon, A. K., Rubli, J., Schwab, K. J., & Melendez-Torres, G. J. (2019). Women’s and girls’ experiences of menstruation in low- and middle-income countries: A systematic review and qualitative metasynthesis. *PLOS Medicine*, 16(5), e1002803.
<https://doi.org/10.1371/journal.pmed.1002803>
- Herbert, A. C., Ramirez, A. M., Lee, G., North, S. J., Askari, M. S., West, R. L., & Sommer, M. (2017a). Puberty Experiences of Low-Income Girls in the United States: A Systematic

- Review of Qualitative Literature From 2000 to 2014. *Journal of Adolescent Health*, 60(4), 363–379. <https://doi.org/10.1016/j.jadohealth.2016.10.008>
- Herbert, A. C., Ramirez, A. M., Lee, G., North, S. J., Askari, M. S., West, R. L., & Sommer, M. (2017). Puberty Experiences of Low-Income Girls in the United States: A Systematic Review of Qualitative Literature From 2000 to 2014. *Journal of Adolescent Health*, 60(4), 363–379. <https://doi.org/10.1016/j.jadohealth.2016.10.008>
- House, S., Mahon, T., & Cavill, S. (2013). Menstrual Hygiene Matters: A resource for improving menstrual hygiene around the world. *Reproductive Health Matters*, 21(41), 257–259.
- Hwang, R.-I. (2018). Comparison of menstrual knowledge, attitudes and education needs of male and female university students. *Journal of the Korea Convergence Society*, 9(10), 497–505. <https://doi.org/10.15207/JKCS.2018.9.10.497>
- Jabbour, H. N., Kelly, R. W., Fraser, H. M., & Critchley, H. O. D. (2006). Endocrine Regulation of Menstruation. *Endocrine Reviews*, 27(1), 17–46. <https://doi.org/10.1210/er.2004-0021>
- Jackson, T. E., & Falmagne, R. J. (2013). Women wearing white: Discourses of menstruation and the experience of menarche. *Feminism & Psychology*, 23(3), 379–398. <https://doi.org/10.1177/0959353512473812>
- Jewitt, S., & Ryley, H. (2014). It's a girl thing: Menstruation, school attendance, spatial mobility and wider gender inequalities in Kenya. *Geoforum*, 56, 137–147. <https://doi.org/10.1016/j.geoforum.2014.07.006>
- Johnston-Robledo, I., & Chrisler, J. C. (2013). The Menstrual Mark: Menstruation as Social Stigma. *Sex Roles*, 68(1), 9–18. <https://doi.org/10.1007/s11199-011-0052-z>
- Kemigisha, E., Rai, M., Mlahagwa, W., Nyakato, V. N., & Ivanova, O. (2020). A Qualitative Study Exploring Menstruation Experiences and Practices among Adolescent Girls Living

- in the Nakivale Refugee Settlement, Uganda. *International Journal of Environmental Research and Public Health*, 17(18), 6613. <https://doi.org/10.3390/ijerph17186613>
- Kettaneh, A., Pulizzi, S., & Todesco, M. (2014). Puberty education and menstrual hygiene management. Paris, France: United Nations Educational, Scientific and Cultural Organization. Retrieved October 3, 2022, from <http://unesdoc.unesco.org/images/0022/002267/226792e.pdf>
- Kissling, E. A. (2022). Capitalizing on the Curse. In *Capitalizing on the Curse*. Lynne Rienner Publishers.
- Koff, E., Rierdan, J., & Sheingold, K. (1982). Memories of menarche: Age, preparation, and prior knowledge as determinants of initial menstrual experience. *Journal of Youth and Adolescence*, 11(1), 1–9. <https://doi.org/10.1007/BF01537812>
- Kowalski, R. M., & Chapple, T. (2000). The Social Stigma of Menstruation: Fact or Fiction? *Psychology of Women Quarterly*, 24(1), 74–80. <https://doi.org/10.1111/j.1471-6402.2000.tb01023.x>
- Lahme, A. M., Stern, R., & Cooper, D. (2018). Factors impacting on menstrual hygiene and their implications for health promotion. *Global Health Promotion*, 25(1), 54–62. <https://doi.org/10.1177/1757975916648301>
- Link, B. G., Yang, L. H., Phelan, J. C., & Collins, P. Y. (2004). Measuring mental illness stigma. *Schizophrenia Bulletin*, 30, 511–541. doi:10.1093/oxfordjournals.schbul.a007098
- Linton, D. (2019). *Men and Menstruation: A Social Transaction*. Peter Lang Incorporated, International Academic Publishers.

- McCarthy, A., & Lahiri-Dutt, K. (2020). Bleeding in public? Rethinking narratives of menstrual management from Delhi's slums. *The Palgrave handbook of critical menstruation studies*, 15-30.
- McHugh, M. C. (2020). Menstrual shame: Exploring the role of 'menstrual moaning'. *The Palgrave Handbook of Critical Menstruation Studies*, 409-422.
- MacLean, K., Hearle, C., & Ruwanpura, K. N. (2020). Stigma of staining? Negotiating menstrual taboos amongst young women in Kenya. *Women's Studies International Forum*, 78, 102290. <https://doi.org/10.1016/j.wsif.2019.102290>
- Marván, M. L., & Alcalá-Herrera, V. (2019). Menarche: Psychosocial and cultural aspects. In *Routledge International Handbook of Women's Sexual and Reproductive Health*. Routledge.
- Marván ML, Ramírez-Esparza D, Cortés-Iniestra S, & Chrisler JC. (2006). Development of a new scale to measure beliefs about and attitudes toward menstruation (BATM): Data from Mexico and the United States. *Health Care for Women International*, 27(5), 453–473. <https://doi.org/10.1080/07399330600629658>
- Mathew, R. R. (2018). *The Crimson Journey from Taboo to Etiquette*. 9.
- Merriam Webster. (n.d.). *Definition of stigma*. Dictionary by Merriam-Webster: America's most-trusted online dictionary. Retrieved September 14, 2022, from <https://www.merriam-webster.com/dictionary/stigma>
- Meschke, L. L., & Dettmer, K. (2012). Don't cross a man's feet': Hmong parent – Daughter communication about sexual health. *Sex Education*, 12(1), 109–123. <https://doi.org/10.1080/14681811.2011.609038>

- Mondragon, N. I., & Txertudi, M. B. (2019). Understanding menstruation: Influence of gender and ideological factors. A study of young people's social representations. *Feminism & Psychology, 29*(3), 357–373. <https://doi.org/10.1177/0959353519836445>
- Moon, G., Kim, I., Kim, H., Choe, S., Jeon, S., Cho, J., Hong, S., & Lee, J. (2020). How can we improve knowledge and perceptions of menstruation? A mixed-methods research study. *BMC Women's Health, 20*(1), 214. <https://doi.org/10.1186/s12905-020-01007-4>
- Morrison, J. L., Basnet, M., Anju, B., Khimbanjar, S., Chaulagain, S., Baral, S., Mahon, T., & Hodgkin, M. (2018). Girls' menstrual management in five districts of Nepal: Implications for policy and practice. *Studies in Social Justice, 12*(2), 252-272.
- Morrison LA, Larkspur L, Calibuso MJ, & Brown S. (2010). Women's attitudes about menstruation and associated health and behavioral characteristics. *American Journal of Health Behavior, 34*(1), 90–100. <https://doi.org/10.5993/ajhb.34.1.11>
- Mutunda Lahme, A., & Stern, R. (2017). Factors That Affect Menstrual Hygiene Among Adolescent Schoolgirls: A Case Study From Mongu District, Zambia. *Women's Reproductive Health, 4*(3), 198–211. <https://doi.org/10.1080/23293691.2017.1388718>
- Omar, H., McElderry, D., & Zakharia, R. (2003). Educating adolescents about puberty: What are we missing?. *International Journal of Adolescent Medicine and Health, 15*(1), 79-84.
- Peranovic, T., & Bentley, B. (2017). Men and Menstruation: A Qualitative Exploration of Beliefs, Attitudes and Experiences. *Sex Roles, 77*(1), 113–124. <https://doi.org/10.1007/s11199-016-0701-3>
- Plan International. (2019, May 28). *One in five UK girls teased or bullied because of their period*. Plan International UK. Retrieved August 10, 2022, from <https://plan->

uk.org/media-centre/one-in-five-uk-girls-teased-or-bullied-because-of-their-period-new-survey-finds

Przybylo, E., & Fahs, B. (2018). Feels and Flows: On the Realness of Menstrual Pain and Crippling Menstrual Chronicity. *Feminist Formations*, 30(1), 206–229.

<https://doi.org/10.1353/ff.2018.0010>

Rastogi, S., Khanna, A., & Mathur, P. (2019). Uncovering the challenges to menstrual health: Knowledge, attitudes and practices of adolescent girls in government schools of Delhi. *Health Education Journal*, 78(7), 839–850. <https://doi.org/10.1177/0017896919850209>

Rheinländer, T., Gyapong, M., Akpakli, D. E., & Konradsen, F. (2019). Secrets, shame and discipline: School girls' experiences of sanitation and menstrual hygiene management in a peri-urban community in Ghana. *Health Care for Women International*, 40(1), 13–32.

<https://doi.org/10.1080/07399332.2018.1444041>

Riley, A. H., Slifer, L., Hughes, J., & Ramaiya, A. (2020). Results from a literature review of menstruation-related restrictions in the United States and Canada. *Sexual & Reproductive Healthcare*, 25, 100537. <https://doi.org/10.1016/j.srhc.2020.100537>

Roberts, T.-A., Goldenberg, J. L., Power, C., & Pyszczynski, T. (2002). “Feminine Protection”:

The Effects of Menstruation on Attitudes Towards Women. *Psychology of Women Quarterly*, 26(2), 131–139. <https://doi.org/10.1111/1471-6402.00051>

<https://doi.org/10.1111/1471-6402.00051>

Rough, B. (2018, October 19). *Why we shouldn't be separating boys and girls for sex ed*. The Washington Post. <https://www.washingtonpost.com/lifestyle/2018/10/19/why-we-shouldnt-be-separating-boys-girls-sex-ed/>

- Rubinsky, V., Gunning, J. N., & Cooke-Jackson, A. (2020). "I Thought I Was Dying:" (Un)Supportive Communication Surrounding Early Menstruation Experiences. *Health Communication, 35*(2), 242–252. <https://doi.org/10.1080/10410236.2018.1548337>
- Saei Ghare Naz, M., Rostami Dovom, M., & Ramezani Tehrani, F. (2020). The Menstrual Disturbances in Endocrine Disorders: A Narrative Review. *International Journal of Endocrinology and Metabolism, 18*(4), e106694. <https://doi.org/10.5812/ijem.106694>
- Schalet, A. T., Santelli, J. S., Russell, S. T., Halpern, C. T., Miller, S. A., Pickering, S. S., Goldberg, S. K., & Hoenig, J. M. (2014). Invited Commentary: Broadening the Evidence for Adolescent Sexual and Reproductive Health and Education in the United States. *Journal of Youth and Adolescence, 43*(10), 1595–1610. <https://doi.org/10.1007/s10964-014-0178-8>
- Schmitt, M. L., Hagstrom, C., Nowara, A., Gruer, C., Adenu-Mensah, N. E., Keeley, K., & Sommer, M. (2021). The intersection of menstruation, school and family: Experiences of girls growing up in urban cities in the U.S.A. *International Journal of Adolescence and Youth, 26*(1), 94–109. <https://doi.org/10.1080/02673843.2020.1867207>
- Sexuality Information and Education Council of the United States. (2004). Guidelines for comprehensive sexuality education: Kindergarten through 12th grade (3rd ed.). Washington, DC: Author.
- Singh, B. M., Zhang, J., & Segars, J. (2020). Period Poverty and the Menstrual Product Tax in the United States [29F]. *Obstetrics & Gynecology*. <https://doi.org/10.1097/01.AOG.0000665164.05365.d0>

- Stubbs, M. L., & Costos, D. (2004). Negative Attitudes Toward Menstruation: Implications for Disconnection Within Girls and Between Women. In *From Menarche to Menopause: The Female Body in Feminist Therapy*. Routledge.
- Tampon Tax—Alliance for Period Supplies*. (2022, April 13).
<https://allianceforperiodsupplies.org/tampon-tax/>
- Tegegne, T. K., & Sisay, M. M. (2014). Menstrual hygiene management and school absenteeism among female adolescent students in Northeast Ethiopia. *BMC Public Health*, *14*(1), 1118. <https://doi.org/10.1186/1471-2458-14-1118>
- The North Carolina Department of Public Instruction. (2019). *Standard courses*. NC DPI. Retrieved November 14, 2022, from <https://www.dpi.nc.gov/teach-nc/curriculum-instruction/standard-course-study/healthful-living>
- Thinx & PERIOD. (2019). *State of the Period: The widespread impact of period poverty on US students*. Retrieved from: https://cdn.shopify.com/s/files/1/0795/1599/files/State-of-the-Period-white-paper_Thinx_PERIOD.pdf?455788
- Turan, J. M., Elafros, M. A., Logie, C. H., Banik, S., Turan, B., Crockett, K. B., Pescosolido, B., & Murray, S. M. (2019). Challenges and opportunities in examining and addressing intersectional stigma and health. *BMC Medicine*, *17*(1), 7.
<https://doi.org/10.1186/s12916-018-1246-9>
- Ulin, M., Ali, M., Chaudhry, Z. T., Al-Hendy, A., & Yang, Q. (2020). Uterine fibroids in menopause and perimenopause. *Menopause (New York, NY)*, *27*(2), 238.
- United Nations Children's Fund. (2020, April). *UNICEF Brief | Mitigating the impacts of COVID-19 on menstrual health and hygiene*.

<https://www.unicef.org/sites/default/files/2020-05/UNICEF-Brief-Mitigating-the-impacts-of-COVID-19-on-menstrual-health-and-hygiene.pdf>

United Nations Educational, Scientific and Cultural Organization. (2014). *Puberty education & menstrual hygiene management* (Booklet 9).

United Nations Educational, Scientific and Cultural Organization. (2009). International technical guidance on sexuality education: An evidence-informed approach for schools, teachers and health educators (Vol. 1-2.). Paris, France: Author.

Wartella, E., Rideout, V., Montague, H., Beaudoin-Ryan, L., & Lauricella, A. (2016). Teens, health and technology: A national survey. *Media and Communication*, 4(3), 13–23. <https://doi.org/10.17645/mac.v4i3.515>

Weiss, M. G., & Ramakrishna, J. (2006). Stigma interventions and research for international health. *The Lancet*, 367(9509), 536–538. [https://doi.org/10.1016/S0140-6736\(06\)68189-0](https://doi.org/10.1016/S0140-6736(06)68189-0)

White, L. R. (2013). The Function of Ethnicity, Income Level, and Menstrual Taboos in Postmenarcheal Adolescents' Understanding of Menarche and Menstruation. *Sex Roles*, 68(1), 65–76. <https://doi.org/10.1007/s11199-012-0166-y>

Wood, J. M. (2020). (In) visible bleeding: the menstrual concealment imperative. *The Palgrave handbook of critical menstruation studies*, 319-336.

Wong, W. C., Li, M. K., Chan, W. Y. V., Choi, Y. Y., Fong, C. H. S., Lam, K. W. K., Sham, W. C., So, P. P., Wong, K., Yeung, K. H., & Yeung, T. Y. (2013). A cross-sectional study of the beliefs and attitudes towards menstruation of Chinese undergraduate males and females in Hong Kong. *Journal of Clinical Nursing*, 22(23–24), 3320–3327. <https://doi.org/10.1111/jocn.12462>

Yermachenko, A., & Dvornyk, V. (2014). Nongenetic Determinants of Age at Menarche: A Systematic Review. *BioMed Research International*, 2014, e371583.

<https://doi.org/10.1155/2014/371583>

APPENDIX A: UMCIRB APPROVAL



EAST CAROLINA UNIVERSITY
University & Medical Center Institutional Review Board
4N-64 Brody Medical Sciences Building · Mail Stop 682
600 Moye Boulevard · Greenville, NC 27834
Office 252-744-2914 · Fax 252-744-2284 ·
rede.ecu.edu/umcirb/

Notification of Exempt Certification

From: Social/Behavioral IRB
To: [Insha Pun](#)
CC: [Sachiyo Shearman](#)
Date: 10/31/2022
Re: [UMCIRB 22-001955](#)
Belief and attitude towards menstruation among American youths and their suggestions to improve early menstrual communication

I am pleased to inform you that your research submission has been certified as exempt on 10/28/2022. This study is eligible for Exempt Certification under category # 2ab.

It is your responsibility to ensure that this research is conducted in the manner reported in your application and/or protocol, as well as being consistent with the ethical principles of the Belmont Report and your profession.

This research study does not require any additional interaction with the UMCIRB unless there are proposed changes to this study. Any change, prior to implementing that change, must be submitted to the UMCIRB for review and approval. The UMCIRB will determine if the change impacts the eligibility of the research for exempt status. If more substantive review is required, you will be notified within five business days.

Document	Description
IRB_ thesis proposal.docx(0.01)	Study Protocol or Grant Application
IRB_Informed Consent Form.docx(0.03)	Consent Forms
IRB_Solicitation Email.docx(0.04)	Recruitment Documents/Scripts
IRB_survey questions.docx(0.01)	Surveys and Questionnaires

For research studies where a waiver or alteration of HIPAA Authorization has been approved, the IRB states that each of the waiver criteria in 45 CFR 164.512(i)(1)(i)(A) and (2)(i) through (v) have been met. Additionally, the elements of PHI to be collected as described in items 1 and 2 of the Application for Waiver of Authorization have been determined to be the minimal necessary for the specified research.

The Chairperson (or designee) does not have a potential for conflict of interest on this study.

APPENDIX B: SURVEY QUESTIONS

I. Demographic Details

Please answer to the following questions about yourself

1. Your gender: 1) Male 2) Female 3) Other

If you chose other, which version would you like to answer for, male or female?

2. Your age: _____ years old
3. Your race:

1. White
2. Black or African American
3. American Indian and Alaska Native
4. Asian
5. Native Hawaiian and Other Pacific Islander
6. Two or more races
7. Other... (please describe)

II: Early Experiences of Communicating About Menstruation

Please answer the following questions about early experiences of communicating about menstruation. This could be your first, memorable verbal, non-verbal, active or passive exchanges about menstruation.

1. When was the first time you had a conversation about menstruation?
 - A. Elementary school
 - B. Middle school
 - C. High school

- D. College
 - E. Others....
2. How old were you at that time?
 3. Which state in the U.S. were you at this time?
 - A. Drop down list of 50 states.
 - B. If you were not in the U.S. at that time, please type the country name....
 4. Who was the first person you had the first conversation about menstruation? (*Answer with as many choices that apply to you*)
 - A. Teacher
 - B. Sister
 - C. Mother
 - D. Grandmothers
 - E. Aunts
 - F. Fathers
 - G. Male sibling
 - H. Friends (male/ female)
 - I. Your partner (girlfriend/ boyfriend)
 - J. Others
 5. What was the major topic of conversation that you had with them (*Answer with as many choices that apply to you*)?
 - A. Biological aspect of menstruation (hormonal changes, phases of menstrual cycle)
 - B. Menstrual hygiene products, or hygiene management.
 - C. Discussion about cramps and its management

- D. Discussion of how embarrassing, or annoying, or restricting menstruation is.
- E. Dos and don'ts during menstruation such as hide menstrual status, or abstain contact with males, modification in diet, or daily routine.
- F. Made fun of someone, been teased,
- G. Shared jokes about menstruation
- H. Menstruation topic accidentally brought up and through other subtle conversation, or through different name/meaning.
- I. Others... (Please describe)

6. How would you describe your early menstrual conversation experiences?

- | | | | | | |
|---------------|---|---|---|---|----------|
| A. Unreliable | | | | | Reliable |
| 1 | 2 | 3 | 4 | 5 | |
| | | | | | |
| B. Untimely | | | | | Timely |
| 1 | 2 | 3 | 4 | 5 | |
| | | | | | |
| C. Infrequent | | | | | Frequent |
| 1 | 2 | 3 | 4 | 5 | |

7. How did you feel while having your early menstrual conversations

- | | | | | | |
|-------------|---|---|---|---|-----------|
| A. Stressed | | | | | Relaxed |
| 1 | 2 | 3 | 4 | 5 | |
| | | | | | |
| B. Confused | | | | | Certain |
| 1 | 2 | 3 | 4 | 5 | |
| | | | | | |
| C. Fearful | | | | | Confident |
| 1 | 2 | 3 | 4 | 5 | |
| | | | | | |
| D. Ashamed | | | | | Unashamed |

1 2 3 4 5

8. According to you, how important is it to have conversation about menstruation?

Not at all important

Very important

1 2 3 4 5

9. How helpful was your first menstrual conversation in understanding about the topic?

Not helpful at all

Very helpful

1 2 3 4 5

10. How satisfied are you with your first menstrual conversation experience?

Very unsatisfied

Very satisfied

1 2 3 4 5

11. How much do you think those early menstrual conversation influenced your belief about menstruation?

Not at all

Very much

1 2 3 4 5

12. How much do you think those early menstrual conversation influences your current attitude towards menstruation?

Not at all

Very much

1 2 3 4 5

III: Belief About and Attitude Towards Menstruation Scale

This part includes questions to examine your beliefs about and attitudes towards menstruation. It comprises of statements which require you to rate how much do you agree or disagree with them. All items are rated on a 5-point Likert scale, where 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 strongly agree.

Questionnaire for Participants who Choose to Identify as Females

- 1 It is important to talk about the menstrual period with men
- 2 Women must avoid swimming while we are having our periods
- 3 I think there are times when we women cannot stand our periods
- 4 Women are proud when we start having our periods
- 5 It is important to discuss the topic of the period at school with boys and girls together
- 6 The period is dirty
- 7 Women must avoid eating or drinking cold things when we are having our periods
- 8 Men have a great advantage not having the annoyance of the period
- 9 We women must hide anything that shows that we are having our periods
- 10 The period affects the performance of women at work
- 11 We women wish that the period would last for just a few minutes
- 12 It is important to buy sanitary pads without being seen
- 13 There are women who feel content to have their periods
- 14 Women wish that we did not have our periods
- 15 It is uncomfortable for us women to talk about our periods
- 16 There are women who are happy every time they have their periods
- 17 It is important that nobody knows when a woman is having her period.
- 18 Women must avoid smoking while we are having our periods
- 19 The period is annoying
- 20 Women must avoid eating certain foods while we are having our periods
- 21 It is embarrassing when a man finds out that a woman is having her period
- 22 Women must drink tea while we are having our periods

- 23 The period is painful
- 24 Women blush when we see an advertisement about sanitary pads when we are with a man
- 25 The period disables women
- 26 There are women who enjoy having their periods
- 27 Women must avoid carrying heavy things when we are having our periods
- 28 There are women who look more attractive while they are having their periods
- 29 It is important to keep the period a secret
- 30 It is uncomfortable for us women to have our periods
- 31 Women must take showers with hot water while we are having our periods
- 32 We women should avoid talking about our periods when there are men present
- 33 The period is a big problem
- 34 Women must avoid exercising while we are having our period
- 35 The period is something that we women have to bear
- 36 Women get excited when we have our first periods
- 37 The period affects the women's ability to do housework
- 38 It is hard to live with the period
- 39 It is important to discuss the topic of the period at home openly
- 40 Having the period is a punishment for women
- 41 It is annoying for us women to have the period every month
- 42 The period affects women's daily activities
- 43 The period is really annoying
- 44 Women must eat or drink hot things when we are having our periods

45 Women must stay away from men while we are having our periods

Questionnaire for Participants who Choose to Identify as Males

- 1 It is important that women talk about the menstrual period with men
- 2 Women must avoid swimming while they are having their periods
- 3 There are times when women cannot stand their periods
- 4 Women are proud when they start having their periods
- 5 It is important to discuss the topic of the period at school with boys and girls together
- 6 The period is dirty
- 7 Women must avoid eating or drinking cold things when they are having their periods
- 8 Men have a great advantage not having the annoyance of the period
- 9 Women must hide anything that shows that they are having their periods
- 10 And the period affects the performance of women at work
- 11 Women wish that the period would last for just a few minutes
- 12 It is important that women buy sentry pads without being seen
- 13 There are women who feel content to have their periods
- 14 Women wish that they did not have their periods
- 15 It is uncomfortable for men to talk about the period
- 16 There are women who are happy every time they have their periods
- 17 It is important that nobody knows when a woman is having her period
- 18 Women must avoid smoking while they are having their periods
- 19 The period is annoying
- 20 Women must avoid eating certain foods while they are having their periods
- 21 It is embarrassing when a man finds out that a woman is having her period

- 22 Women must drink tea while they are having their periods
- 23 I think the period is painful
- 24 Men blush when we see an advertisement about sanitary pads when we are with a woman
- 25 The period disables women
- 26 There are women who enjoy having their periods
- 27 Women must avoid carrying heavy things when they are having their periods
- 28 There are women who look more attractive while they are having their periods
- 29 It is important to keep the period a secret
- 30 It is uncomfortable for women to have their periods
- 31 Women must take showers with hot water while they are having their periods
- 32 Women should avoid talking about the periods when there are men present
- 33 The period is a big problem for women
- 34 Women must avoid exercising while they are having their periods
- 35 The period is something that women have to bear
- 36 Women get excited when they have their first periods.
- 37 The period of facts women's abilities to do housework
- 38 It is hard for women to live with the period
- 39 It is important to discuss the topic of the period at home openly.
- 40 Having the period is a punishment for women
- 41 It is annoying for women to have the period every month
- 42 The period affects women's daily activities
- 43 The period is really annoying for women

44 Women must eat or drink hot things when they are having their periods

45 Women must stay away from men while they are having their periods

IV: Suggestions to Improve Early Menstrual Communication Experiences

This part explores your feedback for designing an effective menstrual education session.

There are a total of eight questions, five of them have options and three are open ended questions. Please consider sharing all your thoughts.

If you were to design an effective session on “Communication about menstruation” for early adolescents:

1. Who would be the participants in that session?
 - A. All students, males and females together
 - B. Females only
 - C. Males only
2. Who would you want the session to be facilitated by?
 - A. A male health teacher
 - B. A female health teacher
 - C. A school nurse
 - D. A person from the county health department
 - E. An anonymous health teacher
 - F. A young advocate
 - G. Someone who is an adolescent themselves, partially facilitated by a teacher.
3. Where would you hold this session at? **Open ended**
4. What topics would you include? **Open ended**
5. State one topic that needs more emphasis? **Open ended**

6. What media would you use to deliver the session?
 - A. Textbooks, printed materials, arts, advertisement pieces.
 - B. Educational videos, including documentaries, film clips
 - C. Participatory learning including group discussion, experience sharing and games
 - D. Demonstration of actual products
 - E. Other:

7. How much time would you allocate for such session?
 - A. Less than 30 minutes
 - B. 30 minutes- 1 hour
 - C. 1 hour- 2 hours
 - D. More than 2 hours

8. How would you deliver it?
 - A. Lectures only
 - B. Lectures and demonstrations
 - C. Participatory activities such as games, storytelling and other group activities
 - D. A combination of all the above methods.

Thank you for participating in this survey. If you have any questions about this survey, please contact Insha Pun at puni22@students.ecu.edu

