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Michaela DeMattio

Bridgewater State University

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The Effect Aromatherapy has on a Woman's Perception of her Body and Menstrual Cycle

Michaela DeMattio

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Dr. Theresa Jackson, Thesis Advisor

Dr. Joseph Schwab, Committee Member

Abstract

Stress-reduction techniques, specifically aromatherapy, have many benefits to the person practicing them, but it is unclear how they affect a woman's perception of her own body and menstrual cycle. The purpose of this project was to investigate the effects that aromatherapy has on a woman's perception of her body and menstrual cycle. It was hypothesized that the aromatherapy would provide stress-relieving effects and increase a participant's positive perception of her body. Participants were recruited through Bridgewater State University's SONA system with the requirement that they were over the age of 18 and assigned female at birth. Participants completed an interview to discuss their body esteem and feelings regarding their menstrual cycle before (pre) and after (post) they engaged in 10-minutes of aromatherapy using lavender essential oil. The pre-and post-interviews were then analyzed to see if participants used more positive language to describe their body and menstrual cycle after the aromatherapy session took place. A qualitative content analysis of the data revealed that women talked more positively about their body and menstrual cycle and shared more information with the researcher following the aromatherapy session, perhaps due to the relaxing effects of the aromatherapy. Participants talked more negatively overall, in both the pre- and post-interviews, when discussing menstruation in comparison to how they discussed their bodies but acknowledged the need for and importance of the menstrual cycle in the post-interview. Given these findings, aromatherapy could be used as a clinical tool to help treat body shame. Aromatherapy could also be used to assist adolescent girls before menarche in reducing feelings of body and menstrual shame and help them to talk more positively in the immediate timeframe.

The Effect Aromatherapy has on a Woman's Perception of her Body and Menstrual Cycle

Women all over the world experience body and menstrual shame and researchers have found evidence linking this to societal standards for women's hygiene and appearance (Chrisler, 2011). Relatedly, women are encouraged to only express a healthy and positive body image, and they are discouraged from talking negatively about their bodies (McKinley & Hyde, 1996). This can lead women to hide or suppress their menstrual and body shame, which can also lead to self-consciousness and contribute to women's feeling of lower social status than men (Johnston-Robledo & Chrisler, 2011). Women who feel shame towards their body or menstrual cycle are at risk for a variety of negative physical health effects as well. For example, shame can result in the improper use of contraceptives to delay menstruation or eating disordered behavior, such as decreased eating combined with increased exercise (Johnston-Robledo & Chrisler, 2011; Tiggemann & Kuring, 2004). Also, women who adopt negative attitudes towards menstruation and their bodies report having less sexual assertiveness and more sexual risk, impacting their sexual decision-making (Schooler et al., 2005). While there is an adequate amount of research dedicated to the prominence of body and menstrual shame, it has not necessarily suggested ways to decrease such feelings of shame.

This qualitative research project investigated women's descriptions of their body and menstrual cycle before and after engaging in an aromatherapy session. If stress-reduction, such as that provided by aromatherapy, can help women to value and respect their bodies and menstrual cycles, their overall well-being could increase significantly. Multiple stress-reduction techniques are available, but the effects of aromatherapy are immediate and an abundance of previous research supports its benefits (Gedney et al., 2004; Karadag et al., 2015). Aromatherapy has been shown to reduce stress in multiple contexts, specifically using the essential oil lavender,

making it a satisfactory stress-reduction technique for the current study (Chien et al., 2012; Karadag et al., 2015). The ultimate purpose of the present study, then, is to investigate and provide a richer description of the effects of aromatherapy on a woman's perception of her body and menstrual cycle.

Menstrual Shaming

For centuries, women have been shamed for their menstrual cycles, and they have been taught 'rules' for covering up or disguising menstruation (Buckley & Gottlieb, 1988). Menstrual shame seems to be a worldwide phenomenon. In some cultures, this is related to the role of religion, while in others it is the result of centuries of mythological tales (Tan et al., 2016). Several religions, such as Judaism and Shintoism, view menstruation as unclean and believe it should be looked at with shame and fear. Some cultures, including Chinese and Taiwanese, believe menstruation is unclean, dirty, and polluting. These cultures associate menstrual blood with pain and death, such as when a woman has a miscarriage. Additionally, many mythical stories from cultures around the world about menstruation being a sin or punishment from a higher power are still present today (Tan et al., 2016).

Research has shown that the topic of menstruation is typically avoided in public conversation (Kissling, 1996). Some mothers have a conversation with their daughters about menstruation, but often the topic is so avoided that adolescent girls might not know about menstruation when beginning menarche, or the first menstrual period (Kissling, 1996; Lee, 2008). Instead, many young adolescent girls learn about menstruation through books, pamphlets, and handouts from their doctor, school, or a female figure in their life, and often after it has already occurred (Johnston-Robledo & Chrisler, 2011; Kissling, 1996). Advertisements for menstrual products, such as maxi pads and tampons, further encourage concealing menstruation, embarrassment

prevention, and cleanliness (Johnston-Robledo & Chrisler, 2011). For example, some popular maxi pad slogans read 'Say no to leakage' and 'No bad smells.' (Stayfree). These advertisements target menstruating women and send the message that it is vital to keep your menstrual status hidden to avoid shame and embarrassment.

Women are taught in health education classes in middle and high school that they should use these sanitary products to clean up and hide their menstruation because it is viewed as dirty and even dreadful in some societies (Chrisler, 2011). Whether women learn about menstruation before or after menarche, they are usually only taught about it from a hygienic perspective, where they are taught to 'clean it up' with hygienic supplies. Shaming women for menstruating and teaching them to keep it hidden has led to the continuation of stigma against menstruation. In the United States specifically, continuing societal shame can lead to individual women having negative attitudes about menstruation. Even young girls who looked forward to their first menstrual period as a sign of maturity reported shame as a common emotion when discussing the experience of menarche (Lee, 2009).

Schooler et al. (2005) examined whether menstrual shame increased body shame, and using a survey design, they observed that women who reported having more negative attitudes towards menstruation also reported experiencing more body shame. This is one of the few studies that directly investigated the impact that menstrual shame has on body shame, which will be discussed further in the next section. Additionally, researchers have discovered that the stigma and shame around a woman's menstrual status elicits negative attitudes from others towards those women. This may contribute to societal views and a woman's self-perception of having a lower social status than men. If women internalize these negative appraisals from others, it can

lead them to have lower self-esteem and a more negative body image as well (Johnston-Robledo & Chrisler, 2011).

Body Shame

Body image is a construct that includes one's self-perception toward their own body as well as attitudes, thoughts, and feelings in regard to the appearance and state of one's body (Avalos et al., 2005). Acquiring a negative body image, also known as body shame, is when one has a negative or distorted self-perception or attitudes toward their own body. Women who have more body shame than others also tend to have lower self-esteem. Previous research has additionally reported that body shame can cause eating restrictions and obsessive exercise, often leading to eating disorders in women (McKinley & Hyde, 1996).

Many young adults feel some sort of body shame, for example in body size, shape, and weight, or other aspects such as body hair and odor (Schooler et al., 2005). College-aged women in particular are extremely susceptible to body shame. This has ramifications for their actions, too, as sexual decision-making becomes increasingly important in college since women may be living on their own for the first time, engaging in increased alcohol consumption, and experiencing more feelings of maturity. Schooler et al. (2005) found in their survey research with college-aged women that when women feel more body shame, they report less sexual assertiveness, which impacts their sexual decision-making, and they engage in more sexual risk. Examples of sexual risks included not saying no to undesired sexual encounters and avoiding the use of protection, such as condoms, during sex. Sexual decision-making and risk avoidance are important to a college-aged woman's well-being and mental and physical health.

A contributing factor to the experience of overall body shame is menstrual shame in particular. Indeed, evidence shows that women who experience menstrual shame also experience

overall dissatisfaction which leads to body shame (Chrisler, 2011). When women have a more negative body image, they report feeling more self-conscious and unattractive while menstruating (Johnston-Robledo & Chrisler, 2011). Alternatively, using the Body Appreciation Scale and the Beliefs about and Attitudes towards Menstruation Scale, Chrisler et al. (2015) found that women who report appreciating and respecting their bodies also appreciate and respect their menstrual cycles. That is, women who adopt a positive body image also have positive attitudes towards menstruation. Another survey study found that women who reported feeling more comfort with menstruation also reported more comfort in their own body (Schooler et al., 2005). This illustrates that women's attitudes towards menstruation are connected with attitudes toward and experiences of their own body.

Self-objectification, a direct outcome of body shame, also contributes to menstrual shame. Self-objectification involves increased self-consciousness represented by constant monitoring of how an individual's body appears to others. Constant worrying about how the body appears to others creates outcomes that can impact quality of life due to daily interrupted thoughts and actions (Fredrickson & Roberts, 1997). Self-objectification has been directly connected to body esteem, menstrual shame, and the internalization of negative attitudes toward menstruation in particular (Chrisler, 2011). Indeed, a survey study on attitudes towards menstruation found that low scores on the Menstrual Attitudes Questionnaire (MAQ), indicating negative attitudes toward menstruation, were associated with higher levels of self-objectification (Johnston-Robledo et al., 2003). Johnston-Robledo et al. (2007) also used survey research to investigate whether undergraduate women's attitudes towards menstruation and breastfeeding were related to self-objectification. They found that women who reported higher levels of self-objectification had significantly more shameful and negative attitudes toward both menstruation

and breastfeeding. Thus, increased menstrual shame is related to both increased self-objectification and higher body shame (Johnston-Robledo et al., 2007).

Aromatherapy

Aromatherapy is a stress-reduction technique, usually completed through the inhalation of essential oils, usually in a quiet and comfortable setting (Karadag et al., 2015). Essential oils are the key aspect of an aromatherapy session. Essential oils are typically used through inhalation, massage, and oral administration. Most aromatherapy sessions use vaporized essential oils. A few drops of oil are mixed into water and diffused through an essential oil diffuser, similar to a small humidifier. The smell of the oils reaches the olfactory bulb and then the limbic system, a part of the brain that is involved in the processing of emotions, motivation, and memory (Karadag et al., 2015). Research has reported that the effects of essential oils through inhalation can be observed in a short time. These effects can be present after 10-minutes of aromatherapy when the essential oil lavender is used (Gedney et al., 2004).

The numerous benefits of essential oils have been supported through a copious amount of previous research. Using self-reported sleep and heart rate variability (HRV), Chien et al. (2012) used a control and experimental group to examine the effects lavender aromatherapy has on middle-aged women with insomnia. The researchers found support for the ability of aromatherapy to reduce stress, increase activation of the parasympathetic nervous system, and promote sleep (Chien et al., 2012). In other experimental studies, aromatherapy is also commonly used for physical pain, anxiety, and depression (Karadag et al., 2015). Aromatherapy has been shown to reduce stress for patients in a variety of conditions including being post-operative or pregnant, as well as having insomnia or cancer (Bikmoradi et al., 2015; Igarashi, 2013; Karadag et al., 2015). For example, Bikmordi et al. (2015) examined the effects

aromatherapy had on 60 patients who had coronary artery bypass surgery using an experimental and control group. The researchers used both a questionnaire and stress measures, such as heart rate, respiratory rate, and blood pressure, before and after an aromatherapy intervention was completed with the experimental group. In the experimental group, the researchers found some effect of the aromatherapy on reduction of mental stress and improvement in vital signs and a significant effect in the positive direction on lowering systolic blood pressure. Research also shows that the stress-reducing and relaxing feelings induced through aromatherapy can be immediate (Toda & Morimoto, 2011), which is ideal for studies with restricted time limits, such as the present study.

In addition to the above noted effects of aromatherapy, the essential oil lavender in particular has been shown to relax the musculoskeletal system and produce sedative effects. Karadag et al. (2015) conducted a randomized control study on 60 ICU patients with insomnia. The researchers administered the Pittsburg Sleep Quality Index (PSQI) and the Beck Anxiety Inventory (BAI) Scale to patients before and after a lavender aromatherapy intervention. Unlike patients in the control group who did not participate in the aromatherapy, the quality of sleep for patients in the experimental group was improved, and level of anxiety reduced after the lavender aromatherapy intervention (Karadag et al., 2015). In addition to these observed effects, lavender is also claimed to be the least toxic and allergenic of the essential oils (Karadag et al., 2015). For these reasons, lavender will be the essential oil used for this study.

There is not yet research that links this technique of aromatherapy to feelings of body esteem. However, due to the fact that aromatherapy can reduce stress and negativity, it is thought that it might also reduce negative feelings about the body, and by association, menstruation. As has been discussed, negative feelings towards menstruation and the body can decrease a

woman's overall quality of life (Schooler et al., 2005). Thus, women need more accessible approaches to combat their feelings of self-consciousness, incompetency, and unattractiveness in relation to menstruation while increasing body image and overall self-esteem. Menstrual and body shame often lead to stress and other negative effects and it is thought that engaging in aromatherapy will produce positive effects such as relaxation and increased body positivity. In this qualitative study, aromatherapy was conducted in-between a pre-and a post-interview asking participants to talk about their bodies and menstrual cycles. It was hypothesized that participants will experience stress relief induced by aromatherapy and that this stress relief would carry over into their feelings about and descriptions of their bodies. It was therefore hypothesized that participants would talk in a more positive manner in regard to their body and menstrual cycle in the post-interview.

Method

Participants

Thirteen female college students were recruited through Bridgewater State University's SONA system, a participant recruitment system. Students enrolled in Introductory Psychology (PSYC 100) are required to participate in psychology research through the SONA system in order to pass the course. Students from other courses can also participate to receive extra credit or to earn credit for a prior absence in the course. Requirements to participate in this study included being assigned female at birth, being over the age of 18, and not having any sensitivities to lavender essential oil. Participants were between the ages of 18 and 22 ($M = 18.61$ years). Out of the 13 participants, 10 were white/Caucasian, 2 were black/African American, and 1 was bi-racial. No other demographic information was explicitly collected.

Materials

This study involved data collection using two interviews, a pre- and a post-, in one session. One interview was conducted before a 10-minute aromatherapy session and the other was completed following the aromatherapy session. The two interviews will be discussed as the pre-interview and post-interview, respectively, for the remainder of this paper. Select interview questions are described below, and a full list of interview questions can be found in Appendix A. Questions for this interview were modified from the interviews described in Jackson (2019) and Repta and Clarke (2013). The interview followed a semi-structured format. Pilot interviews were implemented to ensure that the technique and interview questions were appropriate. These interviews revealed that it would be beneficial to vary the questions asked in the pre-interview and the post-interview slightly to avoid awkwardness and repetition of questions. In a 15-20-minute pre-interview, the researcher asked the participant 11 questions related to their feelings towards their body and menstrual cycle. Interview questions regarding body image included asking participants about their perceptions of a healthy body, how they take care of their body, and what they like about their body. Interview questions regarding the menstrual cycle included asking participants to recall their first period, what they like about their period, and if their period affects their feelings about their body. In a 15-20-minute post-interview, the participant was asked 12 questions related to their perception and feelings towards their body and menstrual cycle that were different yet similar to the questions asked in the pre-interview. For example, in the pre-interview, participants were asked, "how does having your period affect your feelings about your body?" Similarly, in the post-interview, participants were asked, "do you feel like your period interferes with daily routine activities?"

Procedure

Prior to any data collection, the study was approved following an ethics review by Bridgewater State University's Institutional Review Board. The researcher, a white female college student, met participants in Bridgewater State University's Psychology Lab and brought them into a small private room within the lab. The researcher first obtained written consent from the participant, and the participant was asked if they had any questions before beginning the audio recorded portion of the study (see Appendix B). To begin, the researcher started the audio recording device, and the participant was asked to state their name, age, and year at BSU. The study then proceeded with the remainder of the pre-interview questions. The audio recorder was then stopped for participants to engage in 10-minutes of aromatherapy using 100% pure lavender essential oil. The lavender essential oil was combined with water and diffused through an essential oil diffuser. Participants were invited to sit in a comfortable chair, close their eyes, and sit comfortably for the aromatherapy session. A white noise machine was turned on to block out any outside distractions. The researcher sat quietly in the opposite corner of the room throughout the duration of the aromatherapy to reduce feelings of awkwardness but to ensure the participant was engaging in the duration of the session by occasionally turning the chair around to check on the participant.

Following the aromatherapy session, both the participant and researcher returned to the interview table and the audio recorder was turned on. The post-interview began with asking the participant to provide feedback on the aromatherapy session. The study then proceeded with the remainder of the post-interview questions. Upon completion of the interview the participant was thanked for their time and was given the opportunity to ask questions if they had any.

Data Analysis

All audio-recorded data from interviews was transcribed verbatim. A qualitative content analysis was conducted to analyze positive and negative language in both the pre- and post-interviews. From a theoretical standpoint, qualitative methods, and the interview context in particular, are viewed from a social constructionist standpoint. This means that meaning and reality are understood to be co-created by the researcher and participant within the interview context, and the participants' statements are not to be understood as true or false. Instead, they are expected to be representative of and reflect the participants' experience as they understand it and create it within the interview space (Braun & Clarke, 2006). Data analysis also proceeded from this theoretical perspective.

In order to complete the data analysis phase, the researcher first read through the transcribed documents and developed codes based on the language the participants used. It is important to note here that codes were initially developed with no valiance. For example, the passage, "yeah I just feel like it's something natural that doesn't need to be not talked about. It's just a natural thing that everyone goes through. So, I'm comfortable and there's nothing I avoid," was coded as *comfortable discussing menstruation with others*. The researcher then reread the coded passages and separated them into separate documents based on whether they included positive language from the pre-interview or the post-interview and negative language from the pre-interview or the post-interview. Then, the researcher identified common themes within each of these four categories. For example, a theme that arose was a *lack of menstrual knowledge before menarche leading to continued embarrassment* and this included coded passages such as, "it was a little scary. I didn't really know what to do yet. It was painful. I remember that only because I didn't really know how to deal with having cramps. It was a really bad stomachache," and "the only talk we had was when I went on vacation. [...] My mom was like, 'Well, if you

want to go swimming, you're going to have to figure out how to put a tampon in' and I was like, 'okay,' and she kind of just handed it to me and was like 'figure it out.'" The researcher then re-read each of these four documents and noted infrequent or uncommon themes within each. These were removed from the final analysis. Upon completion of analysis the themes were finalized and described in greater detail and quoted passages were selected to represent these themes. These quoted passages were 'cleaned up' to preserve meaning and delete repetition and distracting words such as "um" and "like." The final themes and supporting quotes are described and presented below.

Results

Several overall trends in the data were noted during analysis. Participants used more positive language with the interviewer following the aromatherapy session, and they shared more information with the interviewer about their feelings towards their bodies and menstrual cycles as well. It is important to note that given the heavily instilled shame and negativity towards menstruation, neutral language used by participants when discussing menstruation was considered positive language. Participants talked more negatively overall, in both the pre and post interviews, when discussing menstruation in comparison to how they discussed their bodies. These trends will be further explored in the discussion section. It should also be noted that healthy habits were frequently discussed by participants in the pre- and post-interview as something that is important to them, including maintaining good physical and mental health. This theme will not be discussed further as healthy habits are healthy habits regardless, and the aromatherapy was not expected to have an effect on this perception. Furthermore, discussions about them did not change much from the pre- to the post-interview. Results that will be

discussed below were divided into several themes falling under the categories of pre-interview positive, post-interview positive, pre-interview negative, and post-interview negative.

Pre-Interview Positive

In the first sub-theme participants discussed being **prepared for and comfortable discussing menstruation with other women**. They felt prepared and knowledgeable from health education in school and prior discussion with other women including mothers, sisters, and peers, who they also reported feeling comfortable talking about menstruation with. For example, when Pocahontas (age 18) got her first menstrual period, she said, "I told my mom when she got home from work, but like, it wasn't really like a huge deal. Like I kind of knew like what to do [...] it was just more kind of like a 'mom, by the way.'" Anna (age 21) remembers her first menstrual period positively, "I was very excited. I was like, 'Yes! This is the first step to becoming woman,'" and she also remembers how comfortable she was talking about it, "I'm comfortable talking about it with any woman basically."

Some participants also noted that they felt comfortable talking with male peers or fathers, but less comfortable with male romantic partners. This included Rapunzel (age 18) who said, "I'm very open about it. Like all of my friends, we all like make jokes about it. We're like, 'oh yeah lady red or the red typhoon,' we just like make jokes about it, and like my boyfriend's fine with it, I just like make jokes and he's like, he just kinda laughs it off too, so he's like whatever." Rapunzel is more ambivalent when discussing menstruation with her boyfriend but approaches it with humor and lightheartedness with her friends.

Some participants were tremendously expressive about this, including Snow White (age 19) who said, "I'll scream and shout to the world that I'm on my period." More often, participants talked about menstruation as if it were not a big deal and thus did not mind talking

about it. For example, Ariel (age 18) said “Yeah I just feel like it’s something natural that doesn’t need to be not talked about. It’s just a natural thing that everyone goes through. So, I’m comfortable and there’s nothing I avoid.”

In the second sub-theme participants **acknowledged the necessity of a menstrual cycle** and the purpose it serves. Some understood that their menstrual cycles prepare them to carry a child, and they felt positively about this aspect of menstruation. Many participants saw their menstrual cycle as a helpful bodily cleanse or natural process. Other participants did not know exactly why it is necessary but knew it should happen. Tinker Bell (age 18) understood the need for her menstrual cycle while acknowledging that not everyone might feel as positively as she does:

I feel like a lot of women look at it as nasty. Like it's not, it's there for a reason. It's there to cleanse our vaginas from any infection, any bacteria, things like that. [...] It makes other people uncomfortable because maybe they just don't like it themselves or they don't know how to talk about it or which way to go about it.

In the last sub-theme participants discussed feeling **positive about their personality, body shape, and facial features** when asked, “what do you like about your body?” Participants often talked about liking their personality traits, such as kindness, happiness, and mental toughness. Although participants were asked about what they like about their body in particular, they often talked about their personality as something they like about their body without being directly prompted. For example, Anna (age 21) said, “I'm very motivated. If I want to get something, I will get it no matter what it takes. I'm like a mentally strong person.” Other participants discussed liking their body shape, such as Tinker Bell (age 18), who said, “I like my shape. I feel like once I keep working out, it can be a little bit more defined and toned, but I like

my actual shape. I have some fat you know, some struggle places, I feel like we all have some struggle places in ourselves that we don't really like, but I like my actual shape.” Participants, such as Tinker Bell, expressed more ambivalence when talking about their bodies in the pre-interview, compared to in the post-interview. In the post-interview, participants were more direct and certain when talking about the positive feelings they have concerning their bodies.

Post-Interview Positive

In the first sub-theme participants showed an **increasingly positive construal of menstruation**. This include participants' own reflection throughout the course of their own development and during the course of the interview itself. From menarche to present day, participants mentioned learning ways to cope with PMS symptoms, including using medication such as Advil and heating pads. They talked about developing more of a sense of appreciation for menstruation in terms of fertility and the overall importance of their menstrual cycle, compared to being embarrassed or disliking their period throughout their teenage years. In the pre-interview, participants only discussed acceptance from others and society while in the post-interview, participants expressed being appreciative of their menstrual cycle.

For example, Jasmine (age 18) initially had a very strong negative reaction to menstruation, even hiding it from her mother, saying: “I remember lying to my mom. I told her a ball hit my vagina really hard.” She also talked about avoiding PMS symptoms when she said, “I didn't wanna feel the pain. I fell asleep for long periods of time.” However, after completing the aromatherapy session, she noted that she was more comfortable with her menstrual cycle when saying, “when I was like younger, I would be all willy-nilly. The pad wouldn't be on correctly and it was just a mess. But now I know what I'm doing. I do what I have to do to get through the day.”

In the second sub-theme participants expressed having **support from others**, and specifically they mentioned women being there for each other in regards to menstruation. They viewed menstruation as a sign of womanhood, a way to bond with other women, and something special that women have that men do not. Snow White (age 19) acknowledged this when she said, "I do like how only women get it and only we know how it feels and stuff like that. I think that's a good thing that we can at least have that over anything else." This shows how women came to view menstruation as a special aspect of life that only women can experience, as opposed to viewing it as an inconvenience during the pre-interview.

In the last sub-theme participants mentioned **feeling comfortable in their own skin and having ways of comforting themselves**. These participants expressed an appreciation for their flaws and not having to worry about how their body appears with family, friends, or partners. These participants described this type of experience and used more positive language in their post interviews than they did in the pre-portion. Pocahontas (age 18) comforted herself and expressed comfort in her own body: "I'm trying to just try and remind myself that I like my body and it is just as good as anybody else's." She, along with several other participants, even reported surrounding herself with people who make her feel happy and comfortable: "I choose my friends based off of how they act towards me. I've had like friends in the past who like tear me down just as much as like I would tend to tear myself down. So now I choose to surround myself with people that aren't doing that."

Pre-Interview Negative

In the first sub-theme participants portrayed a **lack of menstrual knowledge before menarche leading to continued embarrassment**. Tinker Bell (age 18) was completely unfamiliar with what was happening when she got her first menstrual period. She said, "I

screamed, I was like, 'Ma! Something's wrong! I'm bleeding I'm not supposed to be bleeding!'" This led to continued embarrassment throughout her childhood and teenage years causing her, and other participants, to feel the need to hide their menstrual status. Tinker Bell continued and said, "because you know how period menstrual blood has a scent to it? So, I feel like everybody can smell me. I feel like everybody can see my pad through my pants. I feel like everybody knows." Similarly, Ariel (age 18), said "I just feel like you always had to hide it like a big secret. When you had to go during class, you'd have to hide something and bring it to the bathroom. So, it was always a big deal. I would stick it in my boob. That was my thing."

Other participants accredited their lack of menstrual knowledge to not discussing menstruation openly since it is a "women's problem." This was viewed as being unfair and frustrating by participants. Belle (age 18) demonstrated her view by acknowledging that she had little knowledge before beginning to menstruate, "it was a little scary. I didn't really know what to do yet. It was painful. I remember that only because I didn't really know how to deal with having cramps. It was a really bad stomachache." This was perceived to be an unfair burden caused by feeling unsupported by others.

Participants also talked more explicitly about having a lack of support upon menarche. These participants discussed not having a female or mother figure to go to. When Pocahontas (age 18) discussed her early experiences of menarche with her mother she mentioned, "the only talk we had was when I went on vacation. [...] My mom was like, 'Well, if you want to go swimming, you're going to have to figure out how to put a tampon in' and I was like, 'okay,' and she kind of just handed it to me and was like 'figure it out.'" In contrast with this experience, women talked after the aromatherapy about having support from other women, as noted above.

In the second sub-theme participants discussed their **negative menstrual expectations and inconveniences due to PMS symptoms**. Participants shared their experiences with PMS symptoms throughout their teenage years and in present day. Due to difficult PMS symptoms, participants held negative menstrual expectations before and during menstruation. PMS symptoms were also discussed as an inconvenience that interferes with daily routine activities. For example, Belle (age 18), said “I definitely feel extra bloated on my period and I feel sick physically. So, kind of just whenever I'm on my period, I feel not myself. I feel not healthy, not energized.” Similarly, Rapunzel (age 18) mentioned how her PMS symptoms interfere with her daily routine activities when she said:

When I'm on my period I feel gross. I always go to the gym to keep up with like my health and all of that. I feel like when I'm on my period I can't cause I just feel gross. I don't have like the motivation to go. I feel like I just wanna sleep. [...] I think it's just all of the negative symptoms that come along with having your period. It's like what makes you say you don't want to have your period. Like you don't want to go through feeling like crap.

Participants also talked about how menstruation made them feel negatively towards their bodies. For example, Anna (age 21) said, “I feel like when I get my period, I get these glasses where I see myself differently because when I get my period I get really bloated. And my head just hurts, and I feel like my brain is giving me a twisted image of how I see myself.” The way participants talked about their menstrual periods and PMS symptoms was more negative in the pre-interview, but still somewhat negative in the post-interview, as will be described.

In the third sub-theme participants communicated in a way that suggested they have a **negative body image**. Negative body image was influenced by negative perceptions of their

body weight or height, self-comparison, and the emphasis that is placed on society's idea of the 'ideal body image.' This ideal body image was described by Rapunzel (age 19) when she said, "there's the image of what the perfect woman looks like. You have to be like skinny, be tall, and like, 'oh, blondes are prettier.' So, a lot of the time you feel like you need to make yourself look better for certain people." Similarly, Tinker Bell (age 18) mentioned this ideal body image and talked about how it negatively influences her body image when she said:

Society has this standard of what a woman should look like. So sometimes I do look at myself in the mirror and I'm like, 'maybe you could lose a couple pounds. I feel like you're getting a little bit overweight.' [...] I'm looking at all these different people and I'm like, you know, maybe that's what I'm supposed to be looking like.

In the pre-interview, participants linked their negative body image directly to society. In the post-interview, participants linked their negative body image to social media and the influence that the media plays on body image. Furthermore, participants had a larger focus on negative aspects of their body image such as body weight and self-judgement in the pre-interview.

In the last sub-theme participants discussed their concern for **how others perceive their body and health habits**. Participants cared about how their body was perceived by strangers, family, friends, and significant others. They continually focused on how their body shape, facial features, and overall appearance looked to the individuals around them. Participants also placed an emphasis on social comparison. Elsa (age 19) expressed caring about how others perceived her body and compared her body size to others when she said:

My old school was a really big fashion industry and I noticed just based off of whoever was a fashion major they seem to be very skinny. It would make me feel a little like, oh

goodness, I know I'm not big but they're like all twigs here. I would get a little self-conscious there at least. Being like, friends with like, the skinniest people on earth.

Similarly, Rapunzel (age 18) cared about how others perceived her body from a young age. She said, "In the dance room you have a mirror in front so you can see your body compared to everyone else and it was very much being compared to everyone else. When costumes came everyone else had a small costume and I knew I had a medium so the labels on the costumes made you feel worse about yourself if it was a bigger size." Elsa and Rapunzel portrayed that caring about other individuals' perceptions of one's own body also comes with social comparison, a recurring sub-theme in the pre-interview.

Post-Interview Negative

In the first sub-theme participants showed a **negative self-image due to the influence of various forms of media**. Participants linked many aspects of their negative self-image to social media (Instagram and Facebook), and to mass media (current pop culture), which lead them to have concerns about being judged by others for their body appearance and weight. Participants attributed their negative body image to this influence in addition to comparing themselves to others in the media. Rapunzel (age 18) acknowledged this when she said, "there's definitely social media and you see what is known as the perfect figure and everyone sees it and strives for it. That kind of influences how I think about my body in a way. [...] Its changed, but it's very much like oh you need to be like skinny, you need to be blonde." Similarly, Tinker Bell (age 18) said:

I feel like nowadays social media has a big influence on, not just me, like how all women look at their bodies. And big brands, you know, like models and stuff like that. You really see more curvier models. You really see curvier people as the face of different things and

on different platforms and stuff, but I feel like it's rare for me to see more curvier girl or when I do see it their version of curvy isn't somebody that looks overweight, you know? and I don't like that.

In the second sub-theme participants mentioned **negative PMS symptoms interfering with body image and motivation**. Similar to the pre-interview, participants reported that PMS symptoms interfered with how they view their bodies and also increased body shame. Menstruation, and PMS symptoms specifically, were talked about as decreasing participants' motivation to complete daily activities. For example, Belle (age 18) said, "on the day I get my period I won't feel good enough to go to school or work because the first days always the worst day for me. So, I'll feel like I can't even like move. My stomach hurts really bad."

Relatedly, participants talked about PMS symptoms negatively affecting their emotions and mental health. Participants described more heightened and negative emotions while menstruating, including Anna (age 21) who said, "it makes me more emotional because I bottle up my feelings and my emotions. I feel like my period is sort of a kick in the butt. [...] It's sort of like it forces me to sort of release, like emotionally too. So, I hate that it makes me do that." Although PMS symptoms were talked about negatively in the pre- and post-interview, there was a slight decline in negativity in the post-interview. For example, as mentioned previously in the pre-interview, Tinker Bell (age 18) had a strong response to her period when she said, "I screamed, I was like, 'Ma! Something's wrong! I'm bleeding I'm not supposed to be bleeding!'" Compared to the language Anna used in the post-interview mentioned earlier in the paragraph, language used in the pre-interview was clearly negative and more intense.

In the last sub-theme participants discussed what they perceived to be a **negative gender divide** that menstruation creates. Participants talked about wishing men could also menstruate to

see what it is like and how men would not be able to cope with menstruation the way women do, which was viewed as unfair by participants. Ariel (age 18) described this when she said, "it kind of stinks. Just because all women have to go through that. But if you're a man, you don't have to go through that. So, in a way, being a woman kinda stinks as far as that."

Pocahontas (age 18) discussed this as something women can overcome but said, "guys could definitely not do the same."

Other participants talked more strongly on the theme of the gender divide menstruation creates. Jasmine (age 18) displayed this when she said, "it just makes me wonder why like men can't have a period too because it's painful and they'll never understand the pain. [...] Men just have it easier. You don't have to push a baby out of your penis and there's no blood coming out of your penis." The negative gender divide that menstruation creates lead to more overall negative attitudes towards menstruation in participants. Conversation concerning the gender divide that menstruation constructs is thought-provoking, as participants also noted their menstrual cycles as something special that all women share as a positive theme.

In addition, it should be noted that the negative themes in the post interview were based more on external influences, such as a problem within society, whereas the negative themes in the pre-interview were highly focused on the participants internalizations, such as self-judgement and shame. This suggests that the discussion of these judgmental and shameful feelings might have been decreased with the help of the aromatherapy session.

As can be seen from the results, participants talked more positively with the interviewer following the aromatherapy session. Although negativity was present in the post-interview following the aromatherapy session, negative themes were discussed with stronger negative language in the pre-interview. Participants provided the interviewer with more information

regarding their body and menstrual cycle in the post-interview, perhaps due to feeling more comfortable sharing with the interviewer after building rapport as well as the aromatherapy session. Although it was sporadically talked about positively by participants, the menstrual cycle was discussed more negatively than the body throughout both the pre- and post-interview.

Discussion

The present study was aimed at investigating the effect aromatherapy has on a woman's perception of her body and menstrual cycle. Participants engaged in an interview with questions pertaining to their bodies and menstrual cycles before a 10-minute aromatherapy session using the essential oil lavender. Participants then engaged in a follow-up interview after the aromatherapy session where they were asked questions similar to those in the interview before the aromatherapy. The researcher coded the interview transcripts to find overall positive and negative themes in the pre- and post-interviews in order to provide a richer description of how women talk about their bodies and menstrual cycles before and after an aromatherapy session. It was hypothesized that participants would experience immediate de-stressing and calming effects as a result of the aromatherapy session and therefore talk more positively about their bodies and menstrual cycles in the post-interview following the aromatherapy session. Overall, the researcher's hypothesis was supported, and women did talk about their bodies and menstrual cycles in a more positive manner following the aromatherapy session.

After transcribing and coding all thirteen interviews, the researcher found that participants talked more positively with the interviewer following the 10-minute aromatherapy session. Participants also shared more information with the interviewer about their feelings towards their bodies and menstrual cycles in the post-interview compared to the pre-interview. These findings support the researcher's hypothesis that women would use more positive

language when talking about their bodies and menstrual cycles after the aromatherapy session due to the calming and relaxing effects of lavender essential oil. These findings support the previous research that investigated the positive effects aromatherapy has on stress and relaxation (Chien et al., 2012). It is not known for sure that it was the aromatherapy that influenced participants to use more positive language in the post-interview because the researcher did not ask this explicitly. Due to previous research showing that aromatherapy can produce stress-reducing effects, which can possibly reduce negative thoughts and language, it can be inferred that the aromatherapy influenced participants' increased use of positive language.

Positive language used by participants was present in both the pre- and post- interviews but was more prevalent in the post-interviews. The positive themes that were identified revealed that young women care about feeling comfortable and happy in their bodies and appreciate menstruation and any support from others regarding their own menstrual cycle. Participants talked more positively about their body and menstrual cycle in the post-interview, whereas they talked a lot about disliking their body shape and appearance in the pre-interview. The change from negative to positive language in the pre- to post-interview increased more when discussing the body compared to the menstrual cycle, but there were still evident positive changes when discussing menstruation. A few participants talked about receiving support from others and mentioned women being there for each other in regards to menstruation which contradicts previous research which was not discussed as much in the pre-interview. Participants also acknowledged the necessity of the menstrual cycle which shaped a sense of appreciation. Most previous research on this topic says that menstruating young girls and women often have no support from others, even from other women (Lee, 2009). In the current study, participants mentioned feeling comfortable talking to other women about menstruation and most participants

talked about having another female figure to go to when needing support. While there was this one significant contradiction to previous research, most of the current study's findings support previous research.

Negative language was present in both the pre- and post-interviews but was more prevalent in the pre-interviews. Themes such as a lack of menstrual knowledge before menarche leading to continued embarrassment, a negative body image, caring how others perceive body and health habits, and negative menstrual expectations and inconveniences due to PMS symptoms were all present in the pre-interview, but were considerably reduced in the post-interview. Negative themes still present in the post-interview included negative self-image due to social media, negative PMS symptoms interfering with body image and motivation, and a negative gender divide. It should be noted that the negative themes present in the post-interview were much less frequent than the negative themes present in the pre-interview. Thus, these findings support the research that shows young women still hold negative feelings towards their bodies and college-aged women are extremely susceptible to feelings of body shame (Chrisler et al., 2015; McKinley & Hyde, 1996; Schooler et al., 2005). Multiple participants linked their feelings of body shame to distorted eating habits. Indeed, as we saw in the pre-interviews, multiple participants associated their feelings of body shame with eating. Also, the current research aligns with past research that has reported lower self-esteem in women who adopt feelings of body shame (McKinley & Hyde, 1996).

The current study's findings support the research that says women are taught to hide their menstrual cycles and avoid conversations about menstruation (Buckley & Gottlieb, 1988; Kissling, 1996). Participants frequently used negative language when they talked about feeling the need to hide feminine products around others and not engaging in conversations about

menstruation unless it is brought up by someone else. In the pre-interviews, participants also talked about learning about menstruation through health classes and pamphlets as opposed to learning from another adult figure. Some also indicated that they had limited or no knowledge of menstruation upon menarche, which is also a prevalent finding in previous research (Johnston-Robledo & Chrisler, 2011; Kissling, 1996; Lee, 2008).

Overall, it was also found that participants talked more negatively when discussing menstruation in comparison to how they discussed their bodies. Although positive changes were seen in the post-interview when talking about both the body and the menstrual cycle, fewer positive changes were found when participants talked about their menstrual cycles compared to the body. This could possibly indicate that menstrual shame is still prevalent, and that aromatherapy might not be able to target such deeply instilled shame. However, it can make participants feel better about something like their bodies, which may not be perceived as so shameful by society, and indeed is the target of much more open and positive discourse. Although participants continued to talk negatively about their menstrual cycles, negative statements about menstruation in the post-interview were frequently followed by participants using positive language to acknowledge the need or importance of the menstrual cycle. While much of the language and experiences regarding menstruation was labeled as negative by the researcher, an aromatherapy session will not change past experiences such as those with prior PMS symptoms, but the aromatherapy session did impact how participants talked about their past negative experiences.

Limitations

As in all studies, the results of the current study need to be considered in the context of multiple potential limitations. First, all thirteen participants for this study were college-aged

students at Bridgewater State University. Due to the small sample size and limited Psychology subject pool, results may not be generalizable to the greater population. Second, given that this was an interpersonal interview, some answers could be untruthful. Participants could have answered in a more socially acceptable way than they would have if it was in some way anonymous (though they were told at the start of the interview their identity would not be traceable to their interviews). Lastly, due to the short description of the study posted on the recruiting system, participants might have had a self-selection bias. The short description posted included a shortened study title, "Aromatherapy and Body Image," and stated that participants would be participating in a 10-minute aromatherapy session. So, in fact, people who felt negatively towards aromatherapy or even worse their bodies might not have signed up for this study.

Future Research

Future research could implement aromatherapy as a clinical treatment for body shame, in particular, for girls entering puberty. Although the current study showed few changes in negative language about menstruation, if we target young adolescents before societal menstrual shame is ingrained in them, it might have more of a positive effect. By addressing body and menstrual shame as it arises in young girls, before or around the time of menarche, the aromatherapy could also help girls talk more positively in the immediate timeframe. It is possible that these immediate responses could carry over into overall body image and feelings towards menstruation and puberty. Future research should also examine whether the increase of positive language was due to the specific technique of aromatherapy or stress-reduction in general. This research could be done by conducting the current study again using a different stress-reduction technique, such as guided meditation or yoga. If an increase in positive language is found in the post-interview

following a different stress-reduction technique it could be concluded that the change was due to stress-reduction in general.

Conclusion

The purpose of the current study was to examine the effects aromatherapy has on a woman's perception of her body and menstrual cycle. Women all over the world experience feelings of body and menstrual shame that is often unavoidable due to societal messages promoting shame and embarrassment. It would be advantageous if women had a way to combat those feelings of shame. The researcher believed that if women talked about their bodies and menstrual cycles in a more positive manner following the aromatherapy, aromatherapy could be implemented into the lives of menstruating women to promote more positivity towards the body and menstrual cycle. The increase in positive language that women used during their interviews in the current study indicates that aromatherapy could provide immediate relieving effects for women who experience body and menstrual shame. This research also sheds light on the challenge's women face every day in regards to their bodies. The more research done on topics such as menstrual shame and body shame, the more women can share their experiences.

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Appendix A

Pre-Interview Questions

- Can you tell me a little bit about yourself?
 - Name
 - Age
 - Year
- Ice breakers:
 - What is your major?
 - How are you liking Bridgewater so far? (Freshman and transfers)
 - What do you like about Bridgewater? (Sophomores, juniors, seniors)
- So were going to transition a little... What have you learned about being a woman as you have gotten older?
 - If direction is needed: appearance or responsibilities

Body Esteem/Body Perception:

- How would you describe a healthy body?
 - Body image versus actual health concerns
- In your opinion, what are some things a healthy woman would do to take care of her body?
- What kinds of sensations make you aware of your body?
 - If direction is needed: physical, bodily, emotions
- Do you find yourself worrying about how your body appears to other people?
- Are there things that you like about your body?
 - If direction is needed: physically, emotionally, attraction

Menstrual Cycle Perception/Feelings Towards Menstruation:

- Can you tell me what you remember about your first time getting your period?
- How did you feel about your period throughout your teenage years?
- Are you comfortable talking about your period?
- How does having your period affect your feelings about your body?
- In your mind, how important do you think menstruation is?
- If you were given the chance to never get your period again would you take it?

Post-Interview Questions**Body Esteem/Body Perception:**

- What are some examples of ways you take care of your body?
- What types of feelings make you aware of your body?
- Do you ever worry about how your body appears to your friends or family?
- What do you like about your body?
 - If direction is needed: physically, emotionally, attraction
- Can you tell me a little bit about what influences how you feel about your body?
- Do you think that your feelings towards your body are mainly positive or negative?
 - Why?

Menstrual Cycle Perception/Feelings Towards Menstruation:

- So, how do you feel about your period now?

- Are there specific ways that you take care of your body when you have your period?
- Do you talk openly about your period now (friends, family, significant other)?
- Do you feel like your period interferes with daily routine activities?
- How does your period affect your feelings about being a woman?
- What do you like about your period?

Appendix B

Bridgewater State University Informed Consent Document

The Effect Aromatherapy has on a Woman's Perception of her Body and Menstrual Cycle

Researchers: **Dr. Theresa Jackson**

Email: t4jackson@bridgew.edu

mdemattio@student.bridgew.edu

Phone: 508-531-2333

Michaela DeMattio

Email:

Phone: 508-801-3429

You are being asked to participate in a project conducted through Bridgewater State University. The University requires that you give your signed agreement to participate in this project. The investigator will explain to you in detail the purpose of the project, the procedures to be used, and the potential benefits and possible risks of participation. You may ask him/her any questions you have to help you understand the project. A basic explanation of the project is written below. Please read this explanation and discuss with the researcher any questions you may have. If you then decide to participate in the project, please sign on the last page of this form in the presence of the person who explained the project to you. You should be given a copy of this form to keep.

1. Nature and purpose of the Project

No previous research has directly investigated the relationship that relaxation techniques might have with body esteem and the menstrual cycle. The purpose of this project is to investigate whether there are any positive changes to how women talk about their body esteem and menstrual cycle after an aromatherapy session. If positive changes are found, then aromatherapy could be used to promote more body positivity.

2. Explanation of the Procedures

After signing this form, you will be asked to participate in a pre- and post- audio-recorded interview asking you questions about your background and experiences with your menstrual cycle and body perception, as well as take part in a brief aromatherapy session. You should not participate in this study if you identify as male, under the age of 18, or have an allergy or sensitivity to lavender essential oil. Participation in these interviews and aromatherapy session is estimated to last approximately 50-60 minutes. Interviews will be audio-recorded and transcribed for analysis purposes; however, no identifying information will be included in the transcripts. Audio files and transcripts will be deleted after the project is completed.

3. Discomfort and Risks

Any audio files or transcripts associated with your interview will be kept confidential, de-identified, and stored on a secure device. BSU has established research systems to store information and help with oversight of research. Your information may be kept in these databases but are only accessible to individuals working on this study or authorized individuals who have access for specific research related tasks. Identifiable information in these databases are not released outside BSU unless stated in this consent document or required by law. Although results of this research may be presented at meetings or in publications, identifiable personal information about participants will not be disclosed.

The essential oil lavender used in this study may have negative effects, such as headaches, to those with sensitivities to strong smells and/or essential oils. In addition, it is possible, though not expected, that you may experience discomfort when discussing and reflecting upon your experiences with your menstrual cycle and body. You will not be asked to answer any questions that you do not feel comfortable answering, and you will be able to stop the interview at any point in the process should you want or choose to. If you do wish to discontinue participation in the study, the audio file associated with your interview will be deleted immediately. It will not be uploaded onto a computer nor transcribed.

4. Benefits:

This study is important to society because very few studies have researched the relationship that relaxation techniques might have with body esteem and the menstrual cycle. If the study reveals positive changes to how women talk about their body esteem and menstrual cycle, then aromatherapy could be used to promote more body positivity.

5. Confidentiality:

Your information will be kept confidential because this form, containing your signature, will be kept separate from your audio recording. Your name will never be associated with your interview. Instead a coded number will be assigned to your audio recording as well as the transcript of your interview. All confidential information including audio recordings and transcripts will be stored in a locked filing cabinet in Dr. Jackson's office or on a password protected computer.

Additionally, while every effort will be made to keep your study-related information confidential, there may be circumstances where this information must be shared with:

- * Federal agencies, for example the Office of Human Research Protections, whose responsibility is to protect human subjects in research;
- * Representatives of Bridgewater State University, including the Institutional Review Board, a committee that oversees the research at BSU.

Refusal/Withdrawal:

Refusal to participate in this study will have no effect on any future services you may be entitled to from the University. Anyone who agrees to participate in this study is free to withdraw from the study at any time without penalty.

By signing below, I am indicating that I understand that it is not possible to identify all potential risks in an experimental procedure, and I believe that reasonable safeguards have been taken to minimize both the known and potential but unknown risks.

I agree that all known risk to me have been explained to my satisfaction. I understand that Bridgewater State University has no policy or plan to pay for any injuries I might receive as a result of participating in this research protocol.

Witness Signature

Date

Participant Signature

Date

Any questions regarding the conduct of the project, questions pertaining to your rights as a research subject, or research related to injury, should be brought to the attention of the IRB Administrator at (508) 531-1242.

Any questions about the conduct of this research project should be brought to the attention of the principal investigator: Dr. Theresa Jackson PhD, t4jackson@bridgew.edu, 508-531-2333