

# The Experiences and Coping Strategies of Female Music Majors Singing During Menstruation: A Case Study

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**Abstract** - *This case study explored the experiences and coping strategies of female music majors navigating their singing practices amidst the complexities of menstruation. Through in-depth interviews with ten participants, this research aimed to uncover the ways in which menstruation influences vocal performance and the overall singing experience of female music majors. This study was based on The Myoelastic-Aerodynamic Theory of Phonation by Janwillem van den Berg (1958). Data collection involves semi-structured interviews with subsequent verbatim transcription and translation, followed by a thematic analysis. The findings reveal that participants shared similar experiences, such as menstrual fatigue, distorted vocal production and quality, emotional sensitivity, and vulnerability with one's voice. Furthermore, the study finds that participants practiced pre- and on-cycle care and self-empowerment to navigate such challenges experienced during their menstrual phase. This study contributes to a deeper understanding of how female music majors managed the challenges they faced in singing while having their menstruation, offering awareness of the ways in which physiological changes caused by menstruation influence singing performance, as well as offering invaluable insights into self-care in mitigating the challenges in singing brought about by menstruation.*

**Keywords:** Menstruation, singing performance, coping strategies

## I. INTRODUCTION

Menstruation, a natural physiological process experienced by women, has long been associated with symptoms ranging from physical discomfort to emotional changes. While its effects on mood and general well-being are well-documented, the experiences of female singers during one's menstrual cycle have not been profoundly explored.

Studies have stressed the numerous symptoms accompanying premenstrual syndrome (PMS), including nasal congestion, fatigue, headaches, and abdominal cramping. These symptoms, in the context of vocal performance, may significantly alter resonance, control,

and technique (Davis & Davis, 1993). Nasal congestion, for instance, can reduce vocal clarity, while fatigue may compromise breath support essential for singing.

Furthermore, abdominal cramping, affecting the appoggio technique, poses a challenge to maintaining vocal stability and control. Understanding this physiological process is vital for promoting overall well-being and enhancing performance outcomes within this demographic. Given that hormonal fluctuations affect the larynx, it is safe to assume that the hormones governing the menstrual cycle may induce temporary alterations in the vibratory characteristics of the true vocal folds before, during, or after menstruation. However, the degree to which this impacts voice quality remains unclear. Additionally, certain populations, such as professional female singers, maybe more attuned to subtle changes in their voice during their menstrual cycle compared to non-professional voice users who do not rely on their voice to the same extent (Abitbol et al., 1999; Chae et al. 2001, Smith, 2016).

Studies have found coping strategies utilized by female vocalists are vocal warm-ups, hydration techniques, and mindfulness practices, to alleviate the effects of menstruation on vocal performance (Clark, 2024; Gunjawate et al, 2017). However, the physiological process of menstruation can present distinctive hurdles that might affect the female singers' vocal capabilities. The menstrual cycle is a highly intricate physiological process with wide-ranging effects on numerous bodily functions. Despite the potential implications for vocal health and artistic expression, an insufficient amount of research examining their specific influences on female singers remains. This study sought to bridge the gap by exploring whether a selected group of female music majors experience these symptoms and, if so, describe their self-management practices to navigate such challenges. This study answers two questions, "What are the experiences of female music majors in singing during their menstruation?", and "What are the coping strategies female music majors use while singing during their menstruation?". The findings of the study will offer practical solutions and support systems for aspiring singers who encounter obstacles in singing associated with menstruation. It will also provide invaluable insights and resources for future female singers navigating their singing careers amidst the complexities of menstruation.

## II. LITERATURE REVIEW

Hormone levels differ greatly among women, just as each singer's unique instrument and vocal fold physiology vary. Not all women experience premenstrual syndrome. Hormones are chemical messengers in the body that drive menstruation. The pituitary gland and ovaries make and release certain hormones at certain times during the menstrual cycle. These hormones cause the lining of uterus to thicken (Cleveland Clinic, 2023). Along with elevated estrogen and progesterone levels, serotonin levels in the brain may change as the menstrual period

approaches. Serotonin is a brain chemical that's responsible for mood, and it could be linked to some of the mood-related changes that are common in the days before and during the period.

Premenstrual syndrome (PMS) is a combination of symptoms that many women get about a week or two before their period. Physical discomfort symptoms such as cramps and bloating are typically a result of PMS, which is often triggered by fluctuating or changing hormones (Guerreiro, 2011). Even though it does not occur during the premenstrual days, painful menstruation is one prevalent symptom of PMS. For female classical singers, PMS symptoms can affect the vocal folds as well. Laryngopathia premenstrualis (vocal dysfunction) is characterized by decreased vocal efficiency ahead of menstruation. A non-singer might not be totally aware of it; however, it is a common condition that is usually more apparent to the singer than to the listener (Monzón, 2019). The decreased vocal efficiency ahead of menstruation were described as follows.

Changes in vocal quality is observed to female singers in effect of the fluctuations in estrogen, progesterone, or their equilibrium. Abitbol et al. (1999) discovered that "estrogens cause thickening of the endometrial mucosa and an increase in the secretions of the endocervical glandular cells. A similar hormonal effect is noted in the laryngeal mucosa, with an increased secretion of the glandular cells above and below the vocal fold edges". Vocal fold edema is also one of the most prevalent vocal dysfunctions due to increased vascularity (blood volume) and fluid retention that could lead to slight swelling or thickening of the vocal folds, which could hamper the movements during the production of voice. It could also result in sluggish laryngeal movements and submucous fold hemorrhage, leading to hoarseness, difficulty in coordinating voice, uncertain or unsteady pitch, and loss of high notes (Gunjawate et al, 2017). Mucus covering the vocal fold mucosa that lubricates the folds during the production of voice also undergoes a change in texture, wherein it affects the efficiency of the mucosal wave and influences the sound of voice (Amir & Shental, 2004). Additionally, high levels of progesterone decrease glandular activity, causing an antiproliferative effect on the vocal fold mucosa; hence, mucus secretions become more viscous, more acidic, dryer, and opaquer. Lubrication of the vocal folds is lost, and clearing one's throat can become overwhelming.

Menstruation may also affect the diaphragmatic breathing of female singers. Singers experiencing symptoms of PMS often encounter compromised breath support (Abitbol et al, 1999). It is caused by menstrual cramps, back pain, diarrhea, and the loss of tone in all striated muscles due to venous dilatation. Loss muscle tone can affect the vocal muscles, the abdominal muscular belt, and the intercostal muscles, reducing pulmonary power. Women experience side symptoms during the premenstrual period caused by variations in progesterone and estrogen levels or their balance. Bloating is also one of the symptoms which results in water retention in the body's tissue. Additionally, this causes the vocal folds to enlarge somewhat or thicken, which may make it more difficult to move them when producing voice. It may cause submucous fold bleeding and slow laryngeal motions, which may result in hoarseness, trouble coordinating voice, erratic or uneven pitch, and loss of high notes.

Mood swings and the irregularity of emotions caused by PMS can affect the vocal performance of a professional female singer. Each human emotion causes a different reaction in the body, and these reactions activate nerve signals (Rumer, 2013). All these nerve signals are then transmitted back to the muscles, many of them controlling the voice. Triggered emotions can affect breathing, jaw, neck shoulders, tongue, and larynx, often causing excess muscle tension. Hormonal changes and female voice production were linked with each other—describing the larynx as a hormonal target organ. In another study, female voice performers who rated themselves highly on sadness tended to exhibit more negative behavior during their performances, such as breath inconsistency and singing under the pitch (Osborn, 2018).

In the olden days, female opera singers were given “grace days” during their premenstrual symptoms to prevent any vocal fold damage or injury. Now, women are expected to push through life’s daily obstacles even when internal biological occurrences are at play. This study is anchored on the Myoelastic-Aerodynamic Theory of Phonation that explains how sound is generated by the vibration of the vocal folds when air from the lungs passes through. The female anatomy undergoes hormone fluctuations every month—estrogen and progesterone going up and down. These hormones can affect many parts of the female body, including one’s vocal quality. According to Janwillem van den Berg (1958), the production of laryngeal voice is a mechanical phenomenon directed by aerodynamic principles and muscular coordination. The vocal cords vibrate purely passively in the blowing airstream and are merely maintained in their position of phonation by the adducting muscles as the laryngeal nerves activate these (Arnold, 1998). The premenstrual phase can produce changes in the vocal folds, causing them to become tense and swollen due to hormonal shifts in the body. Thus, this study promotes the significance of being educated on women’s health in terms of vocal performance and looks for practical solutions that can combat the physiological conditions future female professional singers face.

### III. MATERIALS AND METHODS

The Materials and Methods section outlines the steps and approaches used to identify, select, process, and analyze information ensuring the trustworthiness of the study.

1. **Research Design:** A case study was used to facilitate the exploration of a phenomenon within its context. According to Crowe et al. (2011), case studies are especially valuable for gaining a deep understanding of an issue, event, or phenomenon within its authentic, real-world context. Therefore, the methodology did not include a hypothesis or any preconceived ideas about the data collected.
2. **Participants/Data Sources:** Ten voice students were purposively selected who met criteria needed for the study (Patton, 2001). The criteria include participants’ age between 18-30 years old, either a voice major or voice minor with the voice type as soprano or alto, experience either regular or irregular menstruation, engaged in singing activities regularly, and willing to share experiences. Religion, culture, and medical history are not included in the selection as it is not necessary in the focus of the study.

3. **Tools and Instruments:** A semi-structured interview was used enabling the researchers to gather rich data while maintaining some control over the interview process (Jamshed, 2014). Other additional tools such as voice recorders and other recording equipment necessary for the data collection were used.
4. **Procedures:** The researchers wrote a letter of consent and asked permission from the selected students to gather data. The data was collected through an open-ended question requiring an in-depth understanding of the participants' thoughts and perceptions of the phenomenon. The interview was also conversational to put the participants at ease while answering the questions. The researchers were grouped with their partners and took turns asking questions and taking notes or recording the answers of the participants. The language used in the interview was English.
5. **Analysis Techniques:** The interviews were audio-recorded, transcribed verbatim, reviewed multiple times for accuracy, and thematically analyzed, following the six-step process, to interpret and make sense of the data rather than simply summarizing it (Rosario, 2023; Maguire & Delahunt, 2017).

#### IV. RESULTS AND DISCUSSION

Two research questions were answered: 1) What are the experiences of female music majors singing during their menstruation? (2) What are the coping strategies female music majors use while singing during their menstruation?

##### *Experiences of Female Music Majors When Singing*

Four themes have emerged from the data: Menstrual Fatigue, Distorted Vocal Production and Quality, Emotional Sensitivity, and Voice and Vulnerability. These themes are presented and expanded in the following sections.

##### *A. Menstrual Fatigue*

Menstrual fatigue relates to the symptoms caused by premenstrual syndrome. The participants experienced symptoms, which evidently impacted their ability to engage in prolonged or high-demand vocal performances according to their experiences. Menstrual fatigue is used as an umbrella term for the following sub-themes in the next paragraphs.

- 1) **Lower Abdominal Pain.** This sub-theme revolves around period pain, also known as dysmenorrhea. The pain is often cramp-like and colicky, originating from the lower abdomen (suprapubic area), and radiates towards the lower back and legs, lasting up to 24-48 hours (Unkel, 2012). Additionally, women often describe accompanying manifestations such as diarrhea, nausea, bloating, and tiredness. One participant acknowledged experiencing lower abdominal pain while she was singing during her menstrual cycle causing her pain and discomfort, thus, making it difficult for her to perform well during her voice lesson.

- 2) **Headaches and Nausea.** The next subsequent sub-theme revolves around the menstrual-related headache experienced by a participant. Menstrual-related headaches (MRH) "are a common class of headaches that occur in women related to a decline in estrogen during the menstrual cycle" (Moy, 2022). According to one participant, she experiences extreme headaches whenever she has her period and using her head voice causes dizziness, thus, making it more difficult for her to sing.
- 3) **Fatigue.** This subsequent sub-theme focuses on period fatigue experienced by the participants. The decrease in estrogen levels causes the brain to release the hormone norepinephrine, which causes a decrease in levels of serotonin and dopamine (Albert & Newhouse, 2019). The collective decreased hormone levels are said to lead to fatigue, and even insomnia and depression. Being fatigued or feeling very tired was experienced by some of the participants and one of them described it as "feeling heavy", and according to their report, this experience affected their ability to perform well.

#### **B. Distorted Vocal Production and Quality**

The results of the interviews showed that physiological changes also affected the vocal performance of the participants, with the participants reporting issues such as the following:

- 1) **Dry Throat.** This subsequent sub-theme focuses on the dryness of the throat during the menstrual cycle. Progesterone, the hormone responsible for preparing the female body for pregnancy, plays a role in menstruation, mood, reproduction and so on. Changes in estrogen (sex hormone) and progesterone levels can cause vocal dryness, vocal fold swelling, thickening of mucus, hoarseness and throat pain. Thus, the menstrual cycle influences the female larynx (Sataloff, 2005). One participant reported that she had dry throat, and despite taking actions to alleviate the dryness of her throat, it still affected her vocal performance.
- 2) **Difficulty in Voice Projection.** This next subsequent sub-theme revolves around the challenge in voice projection. Many experienced singers and vocal teachers stress the importance of abdominal or diaphragmatic muscle "support" for achieving breath control, tone quality, range, dynamics, and especially projection (Thorpe et al. 2001). Three of the participants highlighted that they couldn't project their voices due to menstrual cramps.
- 3) **Difficulty in Maintaining Breath Support.** This subsequent sub-theme highlights the experiences of the participants having difficulty in maintaining breath support. For most women, abdominal cramps start before the menstrual phase comes and continue until the body is done menstruating (Woodworth & McCudden, 2020). It is caused by the contraction of the muscle of the uterus that is preparing for the shedding of the endometrial lining, which could make supporting and sustaining the voice more difficult. Participants stated that breath support in terms of vocal technique was impaired

due to their menstruation.

- 4) **Unstable Pitch.** Gunjawate et al. (2017) explained that water retention in the body tissues occurs because of these hormonal changes, resulting in slight swelling or thickening of the vocal folds. Additionally, this could impede the movements during voice production, leading to difficulty in coordinating voice, uncertain or unsteady pitch, and loss of high notes. Four participants confirmed that they experienced having an unstable pitch while singing during their menstruation. One of them mentioned the challenge of hitting high notes even without having a period cramp, saying that she somehow always sounds flat.

#### C. **Emotional Sensitivity**

Dimitry et al. (2004) argue that the experience of emotions in everyday life is influenced by several factors, including an individual's overall stress levels and the phase of their menstrual cycle. The emotional toll of menstruation experienced by the participants was evident through the following:

- 1) **Easily Irritated.** This sub-theme revolves around the mood changes experienced by the participants with regards to their temper. The levels of anger and anger control in women resulted in having consistently higher scores in the data collected than when they were not on PMS (Saglam & Basar, 2019). Four participants experienced feeling annoyed and angered.
- 2) **Easily Cries.** The subsequent sub-theme highlights one mood-related change that was manifested by two participants with regards to being emotional. Many women experience a fluctuation in mood swings, most prominent during the premenstrual phase. During the time of PMS and Premenstrual Dysphoric Disorder (PMDD), women face health-related issues including tension/anxiety, crying spells, being overwhelmed, and extreme moodiness (Ara, 2024). Two participants reported that they tend to get emotional before their vocal performance, making them want to cry.

#### D. **Vulnerability**

"Women who regarded menstruation as bothersome and shameful were more supportive of suppression than women with more positive attitudes" (Johnston-Robledo et al, 2003) The following sub-themes illustrate the vulnerability experienced by the participants during their menstrual cycle.

- 1) **Overthinks.** This sub-theme focuses on the vulnerability of the participants to overthinking. PDD is a mood disorder that can be severe enough to interfere with a woman's daily life: feeling of sadness or hopelessness or despair, decreased interest in activities or relationships, feeling out of control, trouble thinking or focusing (Osborn, 2018). Two participants reported signs of vulnerability to overthinking according to their experience.

- 2) ***Self-Conscious.*** This sub-theme focuses on the vulnerability of the participants of becoming self-conscious about getting blood stains during their vocal performance. A period stain is viewed negatively, which impacts the experience of women who are menstruating. Menstruation is still considered to be a private matter. Thus, public exposure to period stains produces shame in individuals who suffer from it (Ramos, 2022). Although it is normal for women to become more conscious of having blood stains, the experiences of the two participants show how this self-consciousness could affect the singing performance.
- 3) ***Distracted.*** This sub-theme revolves around the vulnerability to becoming distracted by menstrual symptoms. The most recent theory proposes a link between a woman's sex hormones, especially estrogen and progesterone, and her ability to think, learn, and understand, known as cognition skills. Female hormones that regulate reproductive functions have direct effects on the brain and affect brain regions that are involved in thinking skills (Hailes, 2023). Two participants reported that they got distracted due to the menstrual pain that they were experiencing.
- 4) ***Less Confident.*** The next sub-theme discusses the experience of the participants about having low self-esteem in performing while having their menstrual cycle. Self-esteem refers to one's assessment of oneself and that low hormone levels result in emotional sensitivity, which can present as having low self-confidence and depression, particularly among those with menstrual disorders (Jestine & Sinha 2025). Three participants explained that they do not feel confident with singing while on their period. One of them reported having less confidence because she could not reach her expectations when singing. The other two participants expressed that they have low confidence due to the physical discomfort or distress brought about by menstruation.

### ***Coping Strategies Female Music Majors Use While Singing***

Two themes have emerged from the data: pre-and-on-cycle care and self-empowerment.

- 1) ***Pre-and -on-cycle care.*** This theme covers the proactive and remedial strategies and habits of participants in managing the physical discomforts of menstruation to maintain their ability to sing effectively. While experiences vary greatly from woman to woman, the goal is always to approach menstruation with self-care, comfort, and health in mind. Proper menstrual care helps alleviate discomfort and improve daily functioning and overall reproductive health. Some effective practices that were mentioned were staying hydrated, using heat compresses, stocking up on medication, eating food for more energy, and getting enough sleep (Rocha & Behlau, 2018). Participants reported the use of hot compress to relieve pain, drinking water to improve menstrual cramps, eating food for energy, use of medication to treat the dysmenorrhea, and prioritizing sufficient rest for good vocal quality.
- 2) ***Self-empowerment.*** This theme explains how participants harness inner strength and create coping mechanisms to address the pressure of singing while on their menstrual

cycle. Positive thinking, for example, releases dopamine or serotonin, whilst negative thoughts or stress release noradrenaline or adrenaline (Terbeck et al, 2016). Participants have reported manifestations of self-empowerment which includes self-compassion, emotional suppression, being ready or prepared, and lastly, praying to God to carry on with the menstrual challenge.

## V. CONCLUSION

This study was conducted to explore the experiences of female music majors singing during their menstruation. Data was gathered through face-to-face interviews, follow-ups, and backing up findings with the use of secondary sources of data, such as research and article journals, as a mode of triangulation. The inquiry was conducted during the school year 2024-2025 at a private university in Silang, Cavite.

The data showed similar experiences across the participants, such as menstrual fatigue, distorted vocal production and quality, emotional sensitivity, and vulnerability with one's voice. The findings also demonstrated that the participants practiced pre- and on-cycle care and self-empowerment to navigate such challenges experienced during their menstrual phase.

In addition to the physical, mental, and emotional challenges faced by female Music majors during menstruation, the study also highlights the resilience of the participants as they implemented self-care practices to mitigate these effects. This physiological monthly occurrence may impair the vocal folds, the breath support, and the confidence of a female singer; however, they are not necessarily insurmountable. The participants actively engaged in pre- and on-cycle care, such as drinking more water, using heat compress, and sleeping more to manage their well-being and maintain their vocal performances. These experiences suggest the need for further understanding and support for women in music education regarding menstrual health and vocal management as performers.

Finally, future studies may expand to a deeper investigation of the physiological and emotional factors of the menstrual cycle on the voice, offering valuable insights for future investigations.

## AUTHORS' CONTRIBUTIONS

Each researcher played a vital role in the research and writing process. Each author has helped not only in one chapter, but in all sections of each chapter's content. The adviser and other research consultants have helped validate interview questions and made sure that the researchers have followed the design and process to reach the trustworthiness of the study.

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