Fourth Trimester Vaginal Steaming: A Foundational Study

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www.fourthtrimestervaginalsteamstudy.com

Abstract

For centuries, women across the globe have used vaginal steaming to assist with postpartum recovery. This practice is experiencing a resurgence in popularity in the US but obstetricians and gynecologists remain largely unfamiliar with the practice and are unequipped to provide informed advice to their patients on its safety and efficacy. For this reason, clinical studies on vaginal steaming are in high demand. The following study was designed to provide a foundational exploration of the impact of vaginal steaming on a number of postpartum healing indicators. The study's findings indicate that vaginal steaming has a positive impact on a number of postpartum healing indicators, including blood pressure, pulse, uterine restoration, reduction of weight and waist size, healing of tears, gapping and swelling, the expulsion of lochia, bowel regularity and hemorrhoid reduction. Further studies are required to confirm these foundational findings, to test the same indicators with a larger sample size and/or a longer term study, and to repeat the study with fewer variables.

Introduction

Vaginal steaming is a process that involves boiling water in a pot, allowing the water to cool to a comfortable temperature, then sitting, squatting or standing over the pot so that the steam can reach the vulva, vaginal canal, perineum and anus. The water is often infused with minerals and/or herbs to enhance the healing qualities of the steam. This process has a lengthy and well-documented history throughout Africa, Eurasia, Oceania and the Americas.

While vaginal steaming became relatively obscure in the United States after the marginalization of midwifery in the 19th and early 20th centuries, it remained a common practice among women without access to the medical establishment. As it enjoyed a continuous relevance in many other countries, immigrants to the US also continued and furthered the practice within our borders. In particular, communities with South Korean, Mayan, Sudanese, Cambodian, Eritrean and Haitian migrants kept the practice alive and growing.

In the early 21st century, vaginal steaming became popularized as a luxury spa treatment despite its continued use in marginalized communities as a means for preventive reproductive care. As its popularity grew, media outlets began asking medical practitioners to comment on its safety and effectiveness. With little to no background information on the practice they could only respond that they had no official proof that vaginal steaming was either helpful or harmful.

Despite the repeated phrase of ‘no proof’, calls for clinical trials to be conducted remained outside of the medical community. For this reason the Peristeam Hydrotherapy Institute (PHI) commissioned the following study to provide a foundational design to explore the impact of vaginal steaming on postpartum recovery. It is the intention of the PHI that this study will encourage the medical research arena to commission further studies into the use of steam in preventive and procedural reproductive care and maternal health.

Methods

A licensed and certified professional midwife conducted pelvic exams on eleven (11) postpartum clients. She collected data on the following postpartum health indicators: blood pressure, pulse, fundus size, waist size, weight, damage to the labia, lochia, sutures, uterine contractions, pre-eclampsia, breast pain, milk supply, bowel movements, hemorrhoids, bladder voids and incontinence. These particular indicators were selected for inclusion based on a number of factors. The study defines the postpartum recovery period as beginning immediately after giving birth until six weeks postpartum. This time period was selected because the mandatory “six week check up” is when a standard postpartum medical evaluation is conducted resulting in approval to return to normal sexual activity. This medical evaluation includes the following indicators: regulating blood pressure and pulse, ability to urinate and make a bowel movement, suturing tears and weight. Midwives also monitor a number of postpartum indicators in the same six week time period, including the reduction of uterus size its original position below the pelvic bone, breast milk production, and lochia expulsion. Additional indicators of recovery included in

the study are common postpartum symptoms such as restoration of the labia, uterine contractions, suture healing, waist size, breast pain, incontinence and hemorrhoids.

Pelvic exams were conducted 4 days postpartum, 8 days postpartum and 6 weeks postpartum. The information was collected for a five month period between January to May of 2019. The control group received no vaginal steams. The steam group received vaginal steam sessions on days 4 (after pelvic exam), 5, 6, 7 and 8. The vaginal steam sessions lasted for 15 minutes and were prepared using 2.5 cups of water and 3 tablespoons of an herbal formula that includes Artemisia vulgaris (mugwort), Hamamelis (witch hazel), Lavandula (lavender), Matricaria chamomilla (chamomile), Petroselinum crispum (parsley), Rosa (rose), Salvia apiana (white sage), Mentha piperita (peppermint) and Taraxacum (dandelion).

Participants were recruited via advertisements in doula and midwifery networks, vaginal steaming networks, and doctors' offices. Eighteen women in all were recruited, twelve participated in the study and eleven completed the full six weeks of the study. All participants fully consented to taking part in the study. Study participants' ages range from 25 to 41 years old with a median age of 35.3. They represent a broad spectrum of racial/ethnic backgrounds, income brackets and educational attainment. The vast majority of participants are in long term monogamous relationships (including marriage); one participant was single. Approximately half of the participants' pregnancies were planned. One third of participants had home births and two-thirds had hospital births. All births were vaginal; none were cesarean. Participants' maternity leave varied widely and included no leave, 4-6 weeks, 2-3 months, 4 months, 5 months and 6 months.

Limits

Study participants were gathered using a non-probability voluntary sample. Despite the sample's diversity, its size renders it unlikely to be representative of the national population. The study's methodology was not reviewed by an institutional ethics board.

Some indicators in this study are measured in averages; for example, the data provided on blood pressure, pulse, weight and waist size are the average values for each group. In other indicators, a scale was developed and the sum of the group's scores is presented as the measurement. Due to the small sample size, results may not be representative of all women who have given vaginal births.

There were some indicators that had variables that the study design did not predict, such as the impact of participants' use of stool softeners on the bowel movement data. For this reason, some findings may officially be proved inconclusive.

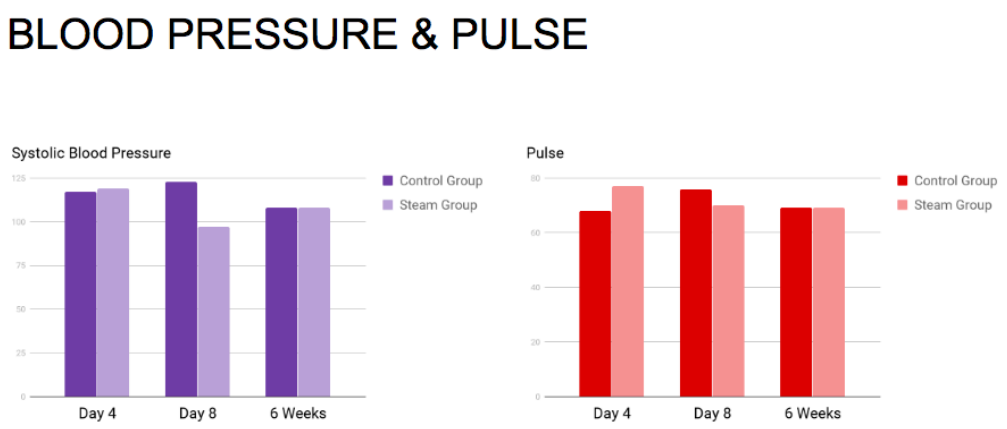
Additional indicators that were originally considered for this study included postpartum depression, comfort returning to sex, pelvic organ prolapse and healthy period return but they were beyond the scope of measure for this study.

Results

Blood Pressure and Pulse

High blood pressure is well known to put pregnant and postpartum patients at risk for seizures and death; this condition is referred to as pre-eclampsia. Pre-eclampsia most often presents at 20 weeks but onset can also happen within 48 hours of delivery. Late term pre-eclampsia can present as late as six weeks. Participants' systolic and diastolic blood pressure was measured and an average calculated for both the control group and the steam group. At Day 4, the control group's blood pressure average was 117/64 and the steam group's blood pressure was 119/68. At Day 8, the control group's blood pressure averaged 123/68 while the steam group was at 97/70. At six weeks, both groups' blood pressure averaged 108/63.

The participants' pulses were also measured and recorded as group averages. At Day 4, the control group's pulse was 68 while the steam group's pulse was 77. At Day 8, the control group's pulse was 76 and the steam group's pulse was 70. At the six week mark, both groups' pulse were at 69.

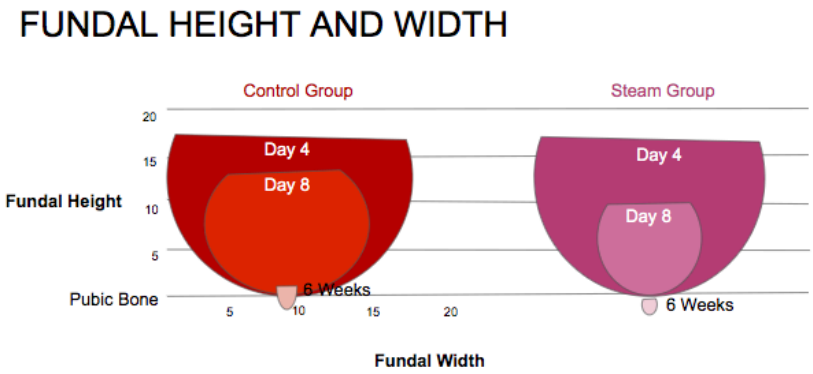


Fundal Finger Breadth, Width and Height

The uterine fundus is the part of the uterus that is furthest from the opening, or the top of the uterus. During pregnancy the uterus drastically changes shape and size. The fundus moves above the pubic bone and rises as high as the sternum. Fundal height and width is often used as an indicator for both the progress of the fetus' growth before delivery and the progress of the mother's recovery after delivery.

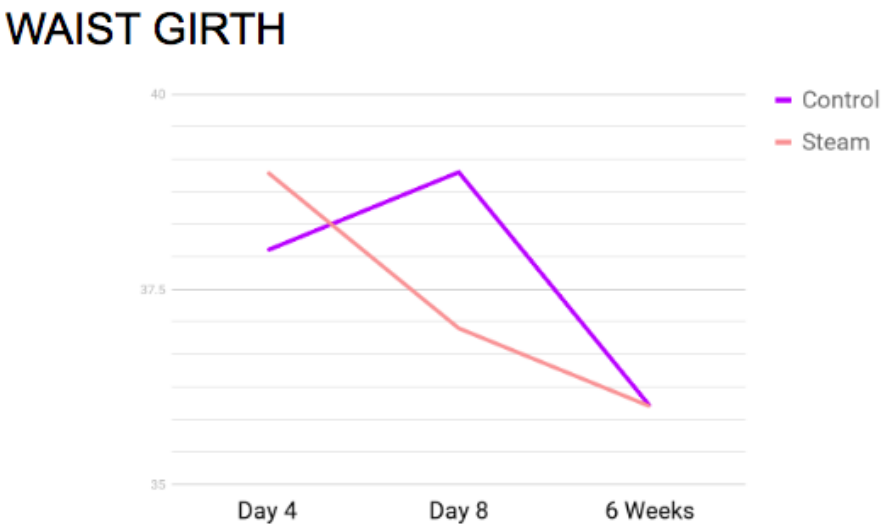
Fundal height, width and finger's breadth from the sternum were measured. At Day 4, the control group's fundus was an average of 4 finger breadths below the sternum, 17 inches wide,

and 17 inches high. The steam group's fundus was an average of 3 finger breadths from the sternum, 16 inches wide, and 17 inches high. At Day 8, the control group's fundus average was 7 finger breadths from the sternum, 12 inches across and 14 inches high. At Day 8, the group that steamed had a fundus that was an average of 8 finger breadths from the sternum, 8 inches across and 10 inches high. At the 6 week mark, one participant from the control group had a fundus that was still above the pubic bone. All other study participants' fundal size was below the pubic bone, but the control group's fundal width and height was 0.4 inches while the steam group's uteruses had returned completely to pre-pregnancy size.



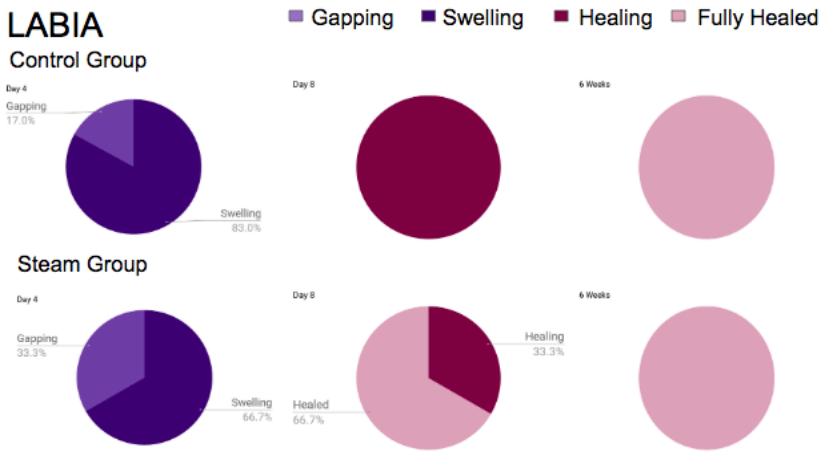
Waist Size and Weight

Waist size in inches and weight in pounds were measured. At Day 4, the control group averaged a 38 inch waist and 169 pounds. The steam group averaged a 39 inch waist and 149 pounds. At Day 8, the control group's waist size had increased to 39 inches with no change in weight while the steam group's waist size had decreased to 37 inches and weight had dropped 2 pounds. At six weeks, both groups had dropped to 36 inch waist size. The control group's weight had decreased to 164 pounds and the steam group's weight average was 142 pounds.



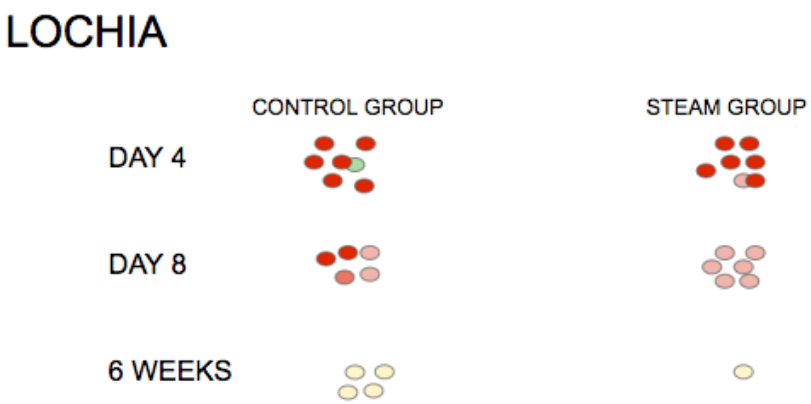
Labia

Each participant's labia was visually assessed for damage, specifically swelling and gapping, which is defined as the labia falling open more than 1.5 inches when legs are in the butterfly position. On Day 4, the control group had 5 participants with swelling and one participant with gapping, while the steam group had 4 participants with swelling and 2 with gapping. By Day 8, all participants in the control group had labia that were visibly in the healing process. The steam group had 2 participants with labia in the healing process and 4 participants with fully healed labia. By the six week mark, all participants had fully healed labia.



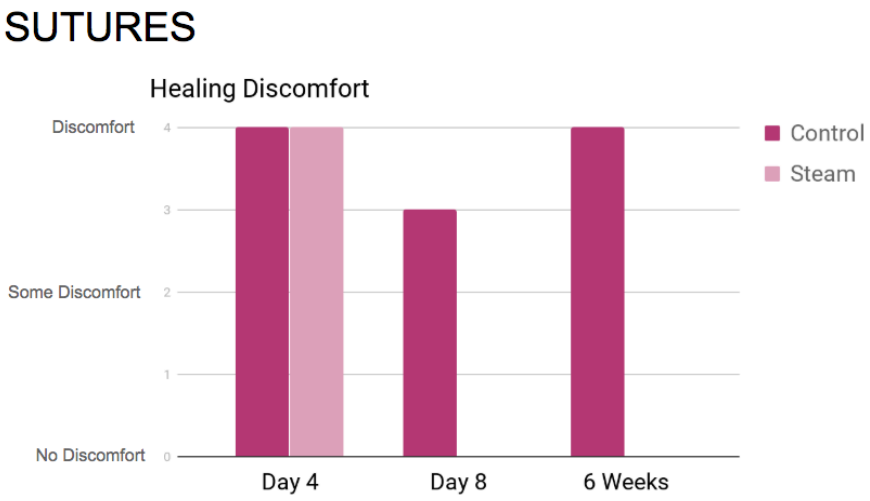
Lochia

Lochia is a type of postpartum discharge that is measured by color. Rubra is the first stage of lochia and it has lots of fresh red or red-brown blood in it. Serosa is the second stage and is characterized by brownish-pink or completely brown blood. Alba is the third stage in which lochia is white or yellowish-white. The final stage is having expelled all lochia. On Day 4, all participants in both groups had rubra lochia. One participant in the control group had rubra with mucus present and one participant in the steam group had both rubra and serosa lochia. On Day 8, 2 participants in the control group still had rubra lochia and 2 participants had serosa lochia while one participant had both light rubra and serosa. In the steam group, all participants had progressed to the serosa with light rubra stage. By six weeks, 4 participants in the control group were in alba and one participant had progressed to no lochia at all. In the steam group, all participants had progressed to no lochia except one, who still had alba lochia.



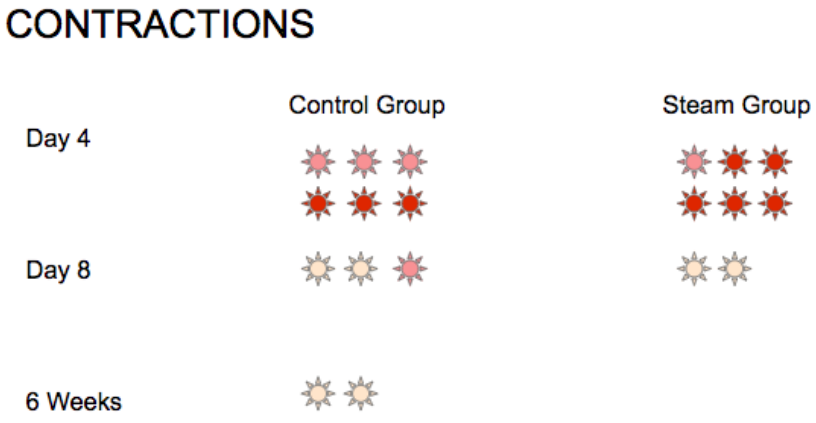
Sutures

During the Day 4 pelvic exam, it was observed that 5 participants in the control group had a 1 degree tear and 4 participants in the steam group had a 1 degree tear. The indicator of healing for these tears are the sutures; participants were asked to comment on whether sutures were itchy, tight, pulling, tender, or had no discomfort. By Day 8, the control group had 1 participant experiencing itchy sutures, 2 participants experiencing pulling or tightness in the sutures, and 2 participants had no healing discomfort. The steam group had no healing discomfort at all. At the six week mark, the control group had 1 participant with itchy sutures, 3 participants with tender sutures and 1 participant with no healing discomfort. The steam group continued to have no healing discomfort but it was observed that 1 participant had noticeable scar tissue. It is unknown if control group participants developed scar tissue as examinations terminated at six weeks.



Uterine Contractions

The uterus contracts in the process of regaining its pre-pregnancy size and shape. These contractions, or cramps, were measured using the following scale and participants' scores were added together to make a group score: 1 = light; 2 = mild; 3 = moderate; 4 = intense. At Day 4, the control group had 3 participants who reported mild contractions and 3 participants who reported moderate contractions for a score of 15. The steam group had 1 participant who reported mild contractions and 5 participants who reported moderate contractions for a score of 17. By Day 8, the control group had 2 participants with light contractions, 1 participant with moderate contractions and 2 participants with no contractions for a group score of 5. The steam group had 2 participants with light contractions and 4 participants with no contractions for a score of 2. By the six week mark, the control group had 2 participants with light contractions for a score of 2. No participants in the steam group had contractions; their score was 0.



Pre-eclampsia

No participants had any signs of pre-eclampsia.

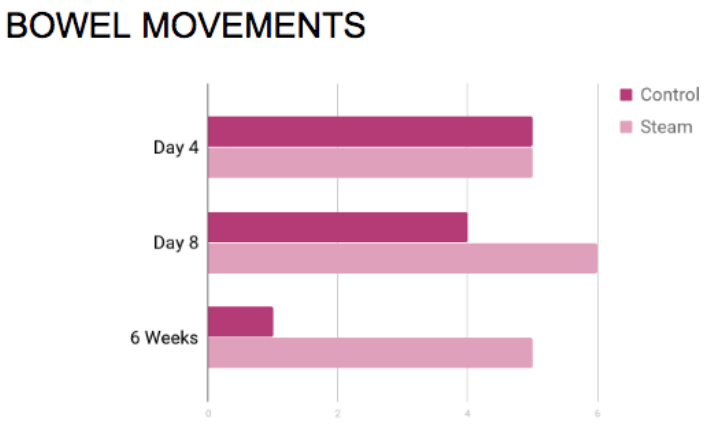
Breast Pain and Milk Supply

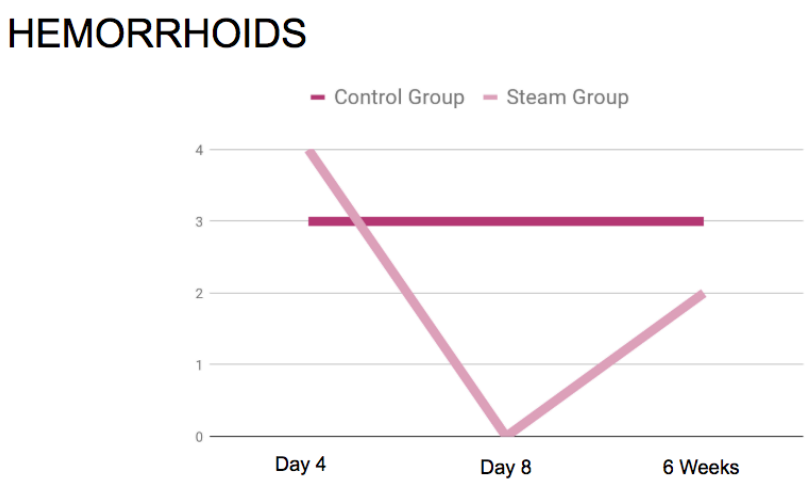
Breast pain was also measured via a discomfort scale and a group score comprised. The scale is No Pain = 0; Mild Discomfort = 1; Intense Discomfort = 2. The control group had 5 participants who experienced mild discomfort and 1 participant who experienced intense discomfort for a group score of 7 on Day 4. The steam group had 4 participants who experienced mild discomfort and 2 who experienced intense discomfort for a score of 8. On Day 8, one participant in the control group had mild discomfort, giving the group a score of 1. The steam group had 2 participants with mild discomfort for a score of 2. By the six week mark, the control group had 2 participants experiencing mild discomfort so their score increased to 2, while the steam group had one participant with mild discomfort for a score of 1.

Milk supply was quantified thus: 0 = formula only; 1 = supplementing breast milk with formula; 2 = exclusive breastfeeding. On Day 4, both groups had a milk supply score of 10. On Day 8, the control group's score had decreased to 8 while the steam group's score increased to 11. By six weeks, the control group's score had not changed and the steam group's score was 10.

Bowel Movements and Hemorrhoids

Bowel movements and hemorrhoids were measured and compiled into group scores. For bowel movements, the scale was 0 = constipated; 1 = regular. For hemorrhoids, the scale was 0 = none; 1 = hemorrhoids. On Day 4, the control group had a bowel movement score of 5 and a hemorrhoid score of 3, while the steam group had a bowel movement score of 5 and a hemorrhoid score of 4. By Day 8, the control group's bowel movement score had decreased to 4 and an unchanged hemorrhoid score; the steam group's bowel movement score had improved to 6 and its hemorrhoid score dropped to 0. At six weeks, the control group's bowel movement score had dropped even further to 1 and its hemorrhoid score had still not changed. The steam group's bowel movement score was 5 and its hemorrhoid score had gone up to 2.





Urination and Incontinence

Finally, bladder voids (urination) and incontinence were measured. Bladder voids were measured on the following scale: 0 = No Stinging; 1 = Stinging. At Day 4, the control group had a group urination score of 2 and 1 participant reported incontinence. The steam group had a urination score of 4 with no reported incontinence. On Day 8, both groups had a score of 1 for stinging urination and no reports of incontinence. By six weeks, both groups had a stinging urination score of 0 and each group had 1 report of incontinence.

Findings

This foundational study had a number of compelling findings. The impact of steaming on blood pressure and pulse is extremely interesting and certainly warrants further study. On Day 4 the blood pressure average and pulse average for both groups was nearly the same but after 5 days of steaming the variable group showed a marked drop in both indicators while remaining within a healthy range. The control group had the opposite trend, showing a marked increase in both indicators. After steaming stopped both groups arrived at exactly the same blood pressure. The implications for steaming in the prevention of postpartum preeclampsia - a dangerous condition related to high blood pressure - are promising. Further exploration of the effects of vaginal steaming on the prevention and treatment of preeclampsia, comprised of participants who are at high risk with additional steam sessions over the 6-week time period, is highly recommended.

The change in fundal measurements after 5 consecutive days of 15 minute vaginal steams was drastically smaller in comparison to the control group. Whereas ultimately both groups' fundi returned below the pubic bone at the 6 week mark, vaginal steaming had a positive impact on the speed by which the uterus is restored. Further study is recommended with a larger and/or

representative sample. Additional steam sessions and exams between 8 days and 6 weeks are also recommended for future studies for further insight into how quickly the uterus is restored.

The study had compelling findings on weight loss and waist size reduction. Whereas the control group lost a total of 5 pounds and 2 inches, the steam group lost 7 pounds and 3 inches, indicating both a greater and a quicker decrease in both categories. Specifically, the changes from Day 4 to Day 8 are interesting. With waist girth, for example, the control group averaged a 1 inch gain in girth by Day 8 whereas the steam group had the opposite trend, losing an average of 2 inches in that same time period. Once steaming ceased, the pace of loss from the steam group slowed to match the control group's rate of loss. The findings indicate that vaginal steaming not only resulted in a greater decrease in weight and waist size but it also initiated the process sooner and expedited the rate of loss. Further study with representative samples and additional steam sessions should be conducted to verify these findings and explore if additional steaming would have more pronounced results.

The study found drastically different results for the steam group on healing the labia. Both groups began on Day 4 with fairly consistent issues with swelling and gapping, but by Day 8 a full two thirds of the steam group had fully healed labias while the entire control group was still experiencing swelling and/or gapping.

The color characterization of lochia provided another compelling finding: at the start of the study, both groups had nearly identical lochia (rubra stage 1). After 5 consecutive days of steaming, the entire variable group had progressed to the serosa lochia stage 2 while nearly half of the control group remained in the rubra stage 1. Most compelling is that with no additional steaming, the variable group had no lochia at all except for 1 participant in the alba stage 3, while the control group saw all participants but 1 still dealing with alba stage 3 lochia. Further study with representative samples and additional steam sessions are recommended; future studies should consider daily monitoring to determine the total number of days it takes to fully expel lochia.

The group was surprised to find that participants nearly universally experienced tearing. Of those who experienced it, 9 required sutures. After steaming, the variable group had no reports of discomfort from Day 8 through the six week mark. The control group, however, reported pulling, itchiness or tenderness for the duration of the study.

The final findings that the study would like to highlight involves bowel movements and hemorrhoids. Participants in both groups began the study with relatively regular bowel movements. After steaming, the variable group improved its regularity score while the control group reported increased constipation. At the six week mark, the steam group continued to have regular bowel movements while the control group reported nearly everyone was constipated. The control group's reports of hemorrhoids shows no change from Day 4 to Day 8 to six weeks. The steam group's hemorrhoids drop from 4 on Day 4 to 0 after 5 days of steaming. Then, with no more steaming until the six week mark, 2 hemorrhoids returned.

Conclusions

Upon analysis of the findings of this study, we conclude that vaginal steaming has a positive impact on many of the indicators of postpartum recovery, particularly in the areas of lowering blood pressure and pulse, uterine restoration, initiating and expediting waist girth and weight loss, labia healing, the quicker cessation of uterine bleeding through drawing out lochia, alleviating suture discomfort, promoting bowel regularity and hemorrhoid reduction. It is possible that steaming positively impacts other postpartum indicators such as breast milk supply, preeclampsia prevention or treatment, incontinence prevention and promotion of urination but further studies are recommended for more conclusive findings.