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Original Research Article

Birthing outcomes and experience of holistic approach in women undergoing trial of labor after cesarean: a retrospective analysis

Kavitha Gautham[1]*, Swarna Ganesan Iyyer[2], Nalini Thiruvengadam[3], Ramya Viswanathan[3], Jeeshia P.[3]

[1]Bloom life hospital, Velachery Chennai, Tamil Nadu, India
[2]Department of Holistic Birth, BloomLife Hospital, Velachery Chennai,Tamil Nadu, India
[3]Department of Obstetrics and Gynaecology, BloomLife Hospital, Velachery Chennai, Tamil Nadu, India

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***Correspondence:**
Dr. Kavitha Gautham,
E-mail: research@bloomhealthcare.in

ABSTRACT

Background: A person-centered holistic birth approach (HBA) includes preparation of mind and spirit along with physical body to help mothers attain their ideal birthing experience. There is paucity availability of research done to evaluate the integrity of HBA. The present study aims to evaluate the birthing experience and outcomes of women undergoing a person-centered naturopathic pregnancy care.
Methods: Women with at least one previous cesarean section with no significant comorbidity and spontaneous conception who opted to have holistic approach towards trial of labor after cesarean (TOLAC) (n=44) in a private birthing center with an exclusive birthing team located in Chennai were provided with evidence based holistic interventions under a naturopathic physician from 28 weeks of gestation till delivery. Data collected between November 2022 to September 2023 were analysed retrospectively for maternal and labor outcomes using descriptive statistics.
Results: Out of all eligible pregnant women who had holistic approach (n=44), 1 in 2 (n=27) (61%) had successful vaginal birth (VB), women who came in labor spontaneously were n=32 (73%). Among those who delivered vaginally (n=27), n=17 (63%) had natural birth with no medical interventions, n=25 (93%) had nonmedicated pain management, n=16 (59%) had natural tears ranging from intact perineum to 2nd degree perineal tear and n=17 (46%) chose various birthing positions. Majority of women rated their childbirth experience to be empowering and satisfactory n=35 (88%).
Conclusions: The study demonstrates, that a holistic approach involving a multidisciplinary team in a specialty birthing center delivered by qualified professionals could result in above mentioned birthing experience and outcomes which in turn empowers women through a person-centered care.

Keywords: Natural birth, TOLAC, VBAC, Naturopathy, Traditional practice, Childbirth education, Doula

INTRODUCTION

Unlike the belief once cesarean, always cesarean, the incidence of Vaginal Birth after Caesarian Section (VBAC) grew over time and peaked in 1995-2000, thereafter, the number of instances steadily declined to half in 2007.Women with previous caesarean section electing to have a vaginal birth (VB) in the following pregnancy are required to do a trial of labour following which, the mode of birth can be determined.[1] Trial of labor after cesarean (TOLAC) is the attempt to have a VBAC. If it is successful, TOLAC results in a VB. TOLAC was supported by the National Institutes of Health (NIH) and the American congress of obstetricians and gynaecologists (ACOG) in 1980 which increased the number of VBACs performed in the US. Women with a 60-70% likelihood of success with TOLAC had no higher morbidity if they underwent TOLAC than an elective repeat caesarean delivery (ERCD). The selection of women for VBAC ought to take into account a number of non-medical and medical

aspects. Indication, type of incision, number of past caesarean sections, physical variables (e.g., advanced cervical opening, effacement, labour progression), obstetric history (e.g., gravidity, parity, previous VB) are among the medical considerations. Additionally, maternal demographic characteristics including age, height, weight, and ethnicity have been reported to affect the likelihood of a successful VBAC. Non-medical criteria include delivery unit rates of successful VBAC, patient desire, and provider comfort with the delivery procedure.[2]

According to recommendations from the world health organization (WHO), C-sections should only be performed when the mother's or the baby's life is in danger and should not account for more than 10% to 15% of all births.[3] Families are severely impacted by high rates of caesarean sections due to unfavorable health effects on mothers and babies that result from the surgery.[4] Globally and in India, LSCS rates are on the rise, and a smart way to lower the rate is through VBAC.[5] The possible risks of the surgical procedure can be avoided by opting for a natural delivery method over another caesarean section. Among the many advantages of a natural delivery are the avoidance of a repeat uterine incision, which raises the likelihood of a future VB. Furthermore, the likelihood of difficulties from subsequent pregnancies increases with each scar on the uterine wall, placenta previa, aberrant placental fixation (placenta accreta, increta, or percreta) and pregnancy implanted in uterine scars. In a normal delivery, there is a significant reduction in blood loss, a decreased chance of thrombotic events, and postpartum mobilization occurs significantly faster. Patient's significantly have quicker recovery and also shorter hospital stay.[1]

According to the WHO in their document general guidelines for methodologies on research and evaluation of traditional medicine, traditional medicine "is the sum total of the knowledge, skills, and practices based on the theories, beliefs, and experiences indigenous to different cultures." The WHO clearly states that the lack of scientific studies on traditional practices "should not become obstacles to their application and development.". The WHO suggests that, "where little or no literature exists, the oral tradition and the source of this tradition need to be clearly stated.[6] The present study aims to evaluate the birthing experience and outcomes of TOLAC for women with previous one C-section (n=40) who underwent a person- centered HBA that includes preparation of mind and spirit along with physical body with interventions such as acupressure, reflexology, massage, hydrotherapy, yoga, diet, aromatherapy, childbirth classes and doula care under a naturopathic physician from 28 weeks of gestation till delivery to help mothers attain their better birthing experience.

METHODS

Study design

Women who opted to have holistic approach towards trial of labour after C-section during November 2022 to September 2023 were included in this study and retrospective analysis was performed.

Study setting

Bloom Life Hospital is a multispecialty hospital with a high-risk obstetrics care centre with well-equipped surgical and neonatal intensive care units and resident doctors available 24/7. The setting has a well-trained birthing team and good infrastructure to provide quality care at international standards. All data were collected anonymously from records.

Selection criteria of study subjects

Women with at least one previous C-section with no significant comorbidity and spontaneous conception who opted to have holistic approach towards TOLAC were included in this study from 28 weeks of gestation till delivery.

High risk maternal and fetal factors was be excluded from the study. Maternal aspects of high-risk factors include women with interpregnancy interval less than 2 years, multiple gestation, malpresentation, antepartum bleeding, oligohydroamniosis (AFI)<8 cm, those not willing for procedure, placental abnormalities, uterine malformations, pelvic malformations/CPD, preeclampsia.

The fetal factors for exclusion were intra uterine growth restriction, preterm and previous history of the birth asphyxia.

Study procedure

Women with one previous LSCS who opted to have holistic approach towards TOLAC (n=44) in a private birthing center with an exclusive birthing team located in Chennai were provided with evidence based holistic interventions. The interventions included acupressure, reflexology, massage, hydrotherapy, yoga, diet, aromatherapy, childbirth classes and doula care under a naturopathic physician from 28 weeks of gestation till delivery. The 11 months study data from November 2022 to September 2023 were analysed retrospectively.

The outcomes such as onset and duration of labor, analgesia preference, interventions used, mode of delivery, episiotomy rates, preferred birthing positions and overall birthing experience were descriptively analysed.

Step by step holistic birthing approach

The following step by step holistic birthing approach (Figure 1) was followed up with those who opted for TOLAC and were willing to proceed with integrated naturopathic methods from 28th week of gestation till 40 weeks of gestation by a qualified naturopathic consultant in a well-equipped multispecialty birthing centre.

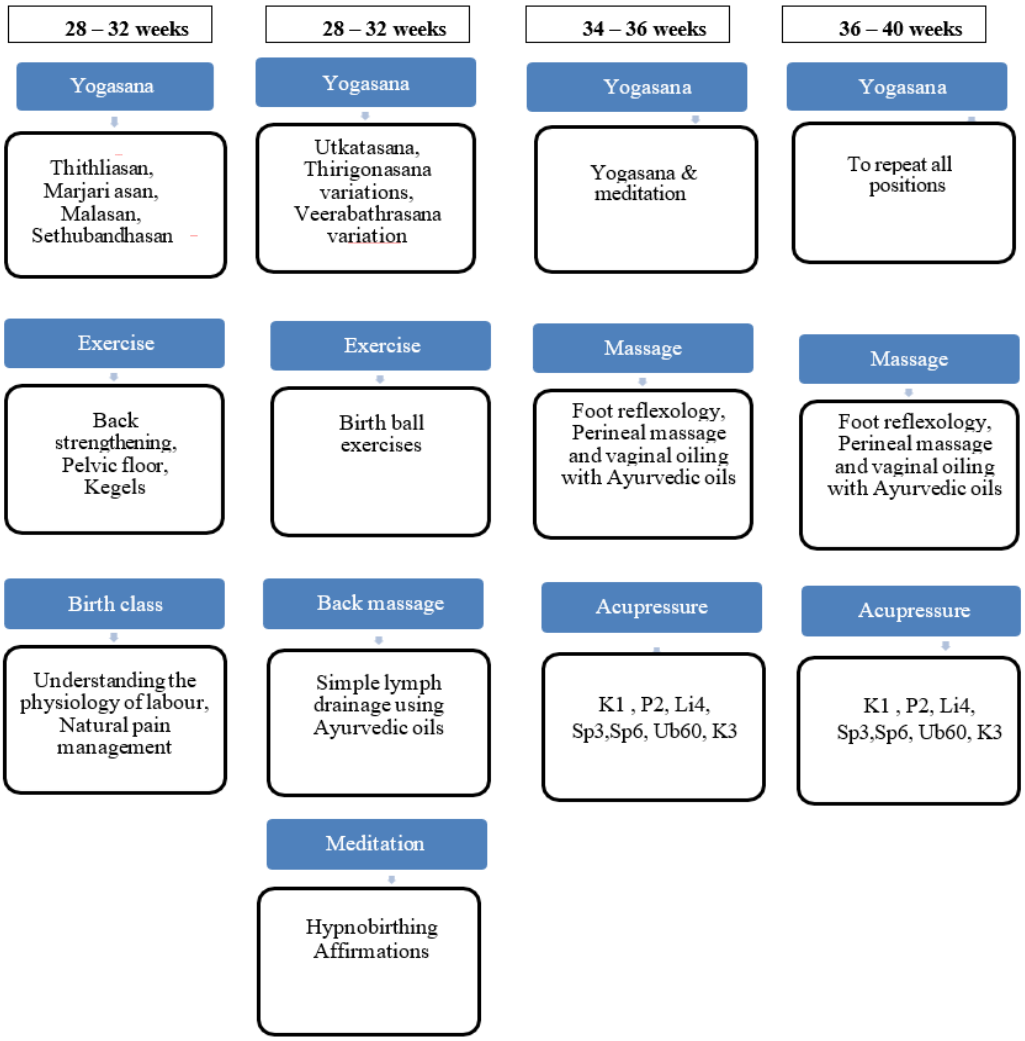

Figure 1: Weekly sessions of HBA with naturopathic intervention.

Outcome assessment

The primary outcome measures were spontaneous labour, mode of delivery (VBAC/C-section/instrumental delivery, natural birthing), pain management (Proportion of women required labour analgesia and other pain relief options), perineal tear, birthing positions, antenatal and intrapartum interventions and birth experience.

Ethical considerations

Informed consent was obtained from the patient after educating them about the procedure in detail along with the expected outcomes. The study was approved by the institutional ethics committee of Bloom Life Hospital, Chennai (IEC-BLH/2024/A04/001).

Data analysis

Descriptive statistics and online social science statistics calculators were used for the statistical calculation. Chi-square 2×2 contingency tables were used for testing statistical differences between the groups. $P<0.05$ was considered statistically significant difference.

RESULTS

The demographic details of the present study shows that most participants were in the age groups of 26-30 years (n=22) and between 28-29th week of gestational age (n=27) (Table 1).

In the present study, among n=44 women who had antenatal holistic approach, n=32 (73%) among them were presented with spontaneous labour. The two main reason for C-section was due to failed induction (n=9) and meconium-stained liquor (n=4) (Figure 2).

Out of all eligible pregnant women who had holistic approach (n=44), 1 in 2 (n=27) (61%) had successful VB, women who came in labor spontaneously were n=32 (73%).

Among those who delivered vaginally (n=27), n=17 (63%) had natural birth with the no medical interventions (Figure 3).

Subjects had to rate their worst pain on a scale of 10, with 0 meaning no pain and 10 meaning the most severe pain possible. Almost all of them (n=25) rated their pain as 4.

Table 1: Demographic features of the study participants.

Parameters	Characters		
Age (in years)	23-25	26-30	26-30
	15	22	7
Gestational age at enrolment for holistic approach (in weeks)	28-29	30-35	35-40
	27	13	4
Religion	Hindu	Christians	Muslims
	32	6	6

Table 2: Effect of HBA on birth position preferences.

Birth position preferred	Number of parturient
Lithotomy	8
Squats	8
Lunges	6
Hands on knees	5

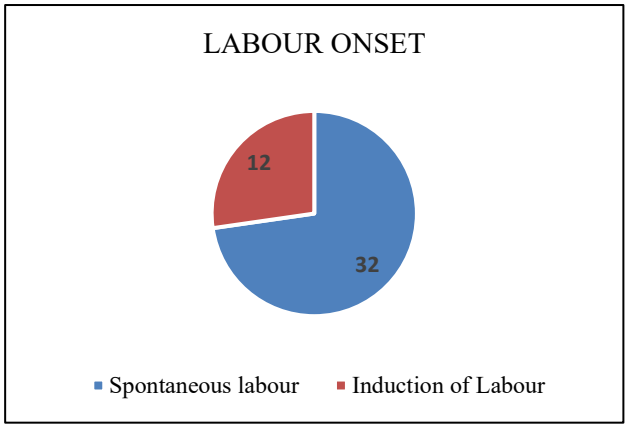

Figure 2: Effects of HBA on spontaneous labour.

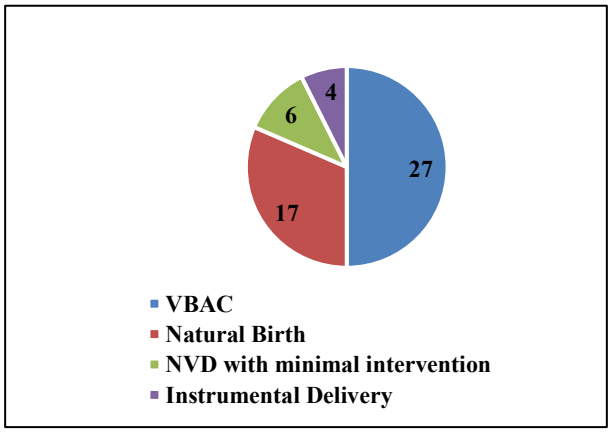

Figure 3: Effect of HBA on labour outcomes.

Among the 27 parturients who delivered through VBAC only 2 of them needed epidural analgesia for pain management (Figure 4).

The present study included women who had previously one cesarian section and the study results reveal that 74% (n=20) had natural tear and only 7 women had to undergo episiotomy (Figure 5).

An equal number of parturients n=8 prefeerred lithotomy and squatting position followed by lunges (n=6) and Hands on knees position (n=5) (Table 2).

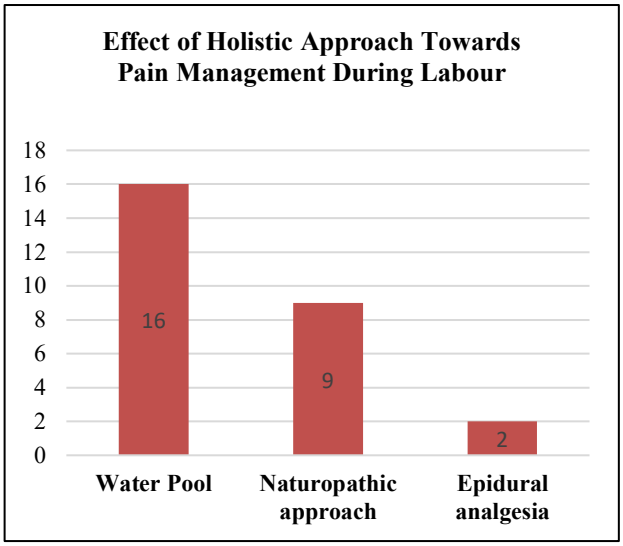

Figure 4: Effect of HBA on pain management during labour.

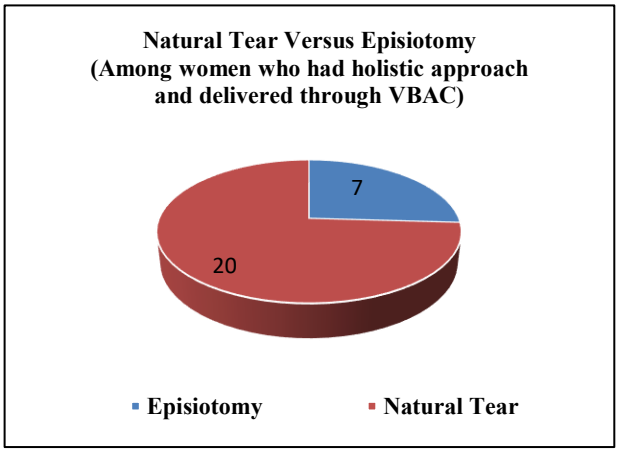

Figure 5: Effect of HBA on perineal tear.

DISCUSSION

The rates of induction of labor (IOL) are rising worldwide with currently almost every third labor being induced.[7] Labour induction and labor interventions are associated with more negative childbirth experiences compared to spontaneous onset of labor.[7] Another study also suggests, that a lengthier first stage of labour is linked to a greater risk of caesarean birth during the second stage in both

nulliparous and multiparous women who received induction of labour.[8] Low-intensity exercise for at least thirty minutes each day is advised by the ACOG. Additionally, they recommended performing high-intensity activities three times a week for at least twenty minutes per session.[9] Letting labor begin on its own supports normal physiology, prevents iatrogenic prematurity, and prevents the cascade of interventions caused by labor induction.[10] Several other guidelines offer complementary medicine and therapy suggestions for standard prenatal care, involving anything from yoga to herbal remedies and nutraceutical.[11]

Most of the present study subjects were in the age group of 26-30 years (n=22) and between 28-29th week of gestational age (n=27) (Table 1). Pregnant women who intend to give birth vaginally can take precautions to lessen the risk of perineal damage. In order to improve muscular suppleness and enable stretching of the perineum during delivery, perineal massage can be started in the third trimester of pregnancy (Figure 1). This lowers the chance of tearing or the necessity for an episiotomy in a nulliparous woman.[12] The acupressure spots used to induce labour have a potent influence on the uterine energy, stimulating uterine activity and encouraging the foetus to be expelled downward. Inducing labour with acupressure is a safe method that promotes cervical ripening and appears to lessen the need for medical intervention during childbirth. This helps to avoid possible complications that might arise from drug induction.[13] final surges in oxytocin and oxytocin receptors may not occur until the final days before the spontaneous start of labor.[14] Letting labor begin on its own with the optimal number of oxytocin receptors and optimal levels of natural oxytocin on board increases the likelihood that labor and birth will progress successfully and that breastfeeding and attachment will get off to the best possible start. The study portrays that HBA can be the prime factor responsible for high rates of spontaneous labour and its outcomes (Figure 2 and 3). Our results were consistent with other studies showing that exercise intervention throughout the pregnancy can offer a greater reduction in risk for cesarean section.[15,16]

Back pain during pregnancy and self-perceived labor pain were measured using the visual analog scale (VAS). Subjects had to rate their worst pain on a scale of 10, with 0 meaning no pain and 10 meaning the most severe pain possible. Almost all of them (n=25) rated their pain as 4 (Figure 4). Among the 27 parturients who delivered through VBAC only 2 of them needed epidural analgesia for pain management. Previous studies also suggests that those who engaged in regular prenatal exercises such as yoga, experienced notably lower rates of caesarean sections, reduced weight gain, higher birth weight, reduced pain and discomfort during labour, lower back pain during pregnancy, and an earlier postpartum recovery than those who did no specific exercise or walked exclusively during pregnancy.[17]

Yoga improves bodily posture and strengthens the back and abdominal muscles, which can in turn decrease back pain.[18] The practice of asanas strengthens the body and improves flexibility, in addition, asanas also influence secretion of hormone from endocrine gland.[19,20] Massage stimulate the body to release endorphin, which are natural pain killing substances and stimulates for the production of oxytocin, decreases stress hormones and neurological excitability. The individual cells of body are dependents on abundant supply of blood and lymph because these fluids supply nutrients, oxygen and carry waste and toxins.[21] Eleven RCTs with 3467 patients were analyzed and women who received antenatal perineal massage had significantly lower incidence of episiotomies and perineal tears particularly the risk of third- and fourth-degree perineal tears, better wound healing and less perineal pain were evident in the antenatal perineal massage group.

Reflexology is another non-pharmacological method for pain relief. In reflexology, by using pressure on reflexive points of sole and sometimes the palm that is in accordance with each part of the body, the balance returns to all over the body and improves comfort.[22,23] Reflexology makes systematic and local physiological changes, looseness of muscles, better blood circulation in the body and finally a deep feeling of comfort and mind balance is created and the symptoms of stress are reduced.[24,25]

During pregnancy and labour, body undergoes several physiological and psychological changes.[26] Management of pain through yogic intervention involves both physical and psychological factors.[27]

When comparing water immersion to control patients, it was shown that women experienced shorter first stage labour durations and a substantial decrease in the usage of epidural, spinal, and paracervical analgesics. The initial stage of labour lasts less when labouring under water, and this effect is observed without any change in the use of oxytocin, aided VBs, perineal trauma, or maternal infection.[28]

In addition, hormones known to lessen labour pain and inhibit the release of stress chemicals like cortisol, adrenaline, and norepinephrine are released: serotonin, endorphin, and enkephalin. Like oxytocin and oxytocin receptors, levels of endorphins and the number of endorphin receptors also gradually increase during pregnancy. Research has shown that women who exercise regularly have higher levels of endorphins when they go into labor and report less labor pain than women who do not exercise letting labor begin on its own and exercising regularly throughout pregnancy will allow women to begin labor with optimal levels of endorphins.[29]

According to the neuro-matrix pain hypothesis, touching and pushing during a massage may activate the afferent impulses that prevent the transmission of pain. In contrast, the cutaneous mechanoreceptors theory suggests that skin-to-skin contact lowers the responsiveness of receptors to

pain, which raises endorphin production and lowers noradrenaline and adrenaline. This promotes homeostatic balance and increases energy fluctuation between the pregnant woman and the therapist.[30] The above facts from previously published literature confirms the therapeutic efficacy of HBA for VBAC.

Previous studies by Daniyati et al has reported the effectiveness of prenatal yoga on the duration of the first stage of labour and perineal rupture in primigravida mothers.[31] The present study included women who had previously one cesarian section and the study results reveal that 74% (n=20) had natural tear and only 7 women had to undergo episiotomy. The study results parallel with another study in which the prenatal digital perineal massage and pelvic floor massage techniques were studied to reduce the perineal trauma in pregnant women older than 35 years.[32]

Since no evidence exists to support the most ideal maternal positions for every woman, the maternal position has been controversial over a long period. Although lithotomy position (or horizontal positions) has become the norm, numerous studies found the advantages in horizontal positions outweighed by the disadvantages such as perineal tears and OASIS.[33] WHO recommended upright position in 1996 and stated women should choose the maternal position according to their preference. The ACOG encourages frequent position changes that don't interfere with maternal and fetal monitoring and that are not contraindicated by complications.[34]

The second-stage of labor is often the most stressful part of the childbirth process for the woman and fetus, and consequently for the care providers.[35] Over the course of the second-stage of labor, upright and lateral positions may have more potential benefits in improving maternal and neonatal outcomes and dealing with certain obstetric complications. Hands and knees are also a gravity-neutral position.[1] It is a great position to help get a break from the intensity of contractions.[36] The all-fours position (Hands on knees) has been associated with less pressure on the perineum (cough, cough, that means less likely to produce tearing, avulsions and prolapse), and gives the provider a good visualization of what's happening. An added bonus is that it has significantly higher rates of intact perineums, first-degreetears (lower rates of 2nd, 3rd and 4th degree tears) and lower rates of episiotomy.[37] Squatting is a great way to increase the diameter of your pelvic outlet. Once engaged, squatting is a great position to help encourage the descent of your baby further into your pelvis.[38]

In squatting birth position, foot posture has a biomechanical impact on lumbar curve and pelvic orientation. When comparing squatting positions (on tiptoes vs feet flat), feet flat on the ground is closer to optimal birth conditions than on tiptoes. This kind of research must be supported because avoiding C-section, using simple posture advice, in countries with poor healthcare accessibility or where C-section is associated with a high risk of maternal morbidity or mortality. Supporting women in their choice and advising on an optimal position according to our research should be a new challenge for future birth-care providers should be a smart obstetrical approach.[39] Lunging involves placing the foot on a chair or footstool and then leaning into the lunge during a contraction. Lunging is an activity that can open the pelvis and offer more room for the fetus to move down and help alleviate lower back pain.[40] In our present study women were permitted to choose their birth positions according to their preferences and comfort. An equal number of parturients n=8 prefeerred lithotomy and squatting position followed by lunges (n=6) and hands on knees position (n=5) (Figure 5).

The use of non-pharmacological methods for natural birthing is becoming more and more common these days. Non-pharmaceutical approaches of managing labour pain, perineal tear especially towards TOLAC are typically non-invasive, safe, and economical. This helps women to have more control over the childbearing experience and promotes their involvement in the labour process. While antenatal yoga, exercise, massage therapy and acupressure can aid in spontaneous labour and relieve back pain, the shortest labour period can be achieved by the use of water immersion, breathing exercises, aromatherapy, massage, and doula care and our holistic pain management techniques. One promising method for influencing the psychological and physiological elements influencing labour pain and anxiety is the birth classes during the first HBA session. Foot reflexology and massage work mechanically because of energy theory, which suggests that applying pressure in different directions to the foot's reflex sites activates the parasympathetic nervous system in the same way.

Through this study, we recommend developing a standard protocol through a prospective study design on a larger sample size that includes various outcome measures to assess the effects of HBA on VBAC.

Limitations

Our study has limitations such as retrospective data, lesser sample size with inconsistent data. There was not much difference in the obstetric population since the hospital setting is in a metropolitan city. These facts which could contribute to few discrepancies in our study results.

CONCLUSION

Current evidence from this study overwhelmingly supports the role of HBA in allowing labor to begin on its own and favour VBAC. As ACOG actively promotes VB and discourages elective inductions, childbirth educators and others in the birth community can extend this new support to help women to desire, plan for, and achieve letting labor begin on its own with successful VBAC. Therefore, women after previous C section can be encouraged to be

active throughout pregnancy and follow a supervised HBA unless contraindicated.

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Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee Bloom Life Hospital, Chennai (IEC-BLH/2024/A04/001).

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