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**A Cross-Sectional Study on the Impact of the Ardhamandalam (Aramandi) Practice in Classical Bharatanatyam Dancers During Labour**

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**Abstract**

**Introduction:**

Classical Indian dance forms such as *Bharatanatyam*, *Kuchipudi*, and *Mohiniattam* are culturally significant, characterized by intricate movements and postures essential for their practice. Among these, "*Aramandi*" or "*Ardhamandalam*" is a foundational posture known for enhancing hip flexor flexibility, strengthening the pelvic floor, thigh adductors, and core muscles. These physical benefits extend beyond dance, potentially aiding in preparing the body for childbirth by improving muscular endurance and flexibility. Ayurveda emphasizes maintaining a balanced *Apanavata* to facilitate smooth labor, aligning with the benefits attributed to practicing "*Aramandi*." Globally, integrating practices like *Yogasana*, *Pranayama*, and dance

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during pregnancy has shown positive effects on childbirth outcomes, including increased chances of normal vaginal delivery.

**Materials & Methods:**

This study involved pregnant *Bharatanatyam* dancers proficient in "*Aramandi*." Assessments included measuring hip flexor flexibility, pelvic floor strength, and core endurance using standardized protocols. Qualitative data on participants' experiences with "*Aramandi*" during pregnancy and its perceived impact on labor were collected through interviews and questionnaires.

**Results:**

Regular practice of "*Aramandi*" during pregnancy improved hip flexor flexibility, enhanced pelvic floor strength, and increased core endurance among participants. Dancers reported feeling physically prepared for labor with reduced discomfort during pregnancy. Integration of "*Aramandi*" into prenatal routines correlated with shorter labor durations and higher rates of natural delivery.

**Discussion & Conclusion:**

Integrating classical dance practices like "*Aramandi*" into prenatal care shows promise in enhancing maternal physical fitness and potentially improving childbirth outcomes. *Ayurveda* principles support the role of practices that maintain *Apanavata* in facilitating smoother labor. Further research should explore broader applications and long-term benefits of cultural dance forms in maternal health programs, highlighting their holistic advantages for expectant mothers worldwide.

**Keywords:** *Aramandi*, *Bharatanatyam*, pregnancy, childbirth, *Ayurveda*

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Email id:nidhi.ayurveda1@gmail.com.

**Introduction:** *Aramandi*, also known as Ardhamandala, is a fundamental posture in Indian classical dance forms, especially in *Bharatanatyam* and Odissi. The term "*Ardhamandi*" is derived from the combination of two Sanskrit words: "*Ardha*," meaning half, and "*Mandi*," meaning sitting posture. Together, *Ardhamandi* refers to a semi-seated or half-squatting stance that is characteristic of the traditional Indian dance styles.

**Details of the Aramandi Posture:**

**Posture-** Semi-squatting position with the knees bent and the weight evenly distributed on both legs. The stance resembles the shape of a partially opened lotus flower as shown in Figure 1.

**Body Alignment-** The back is kept straight, and the chest is lifted. The head is held in a neutral position with the eyes focused on a specific point.

**Symbolism-** This posture symbolizes a sense of rootedness, stability, and connection to the earth. It is considered a strong and foundational stance, providing the dancer with a solid base from which to execute intricate footwork, body movements, and expressions.



Fig 1: Posture depicting Ardhamandalam/ Aramandala

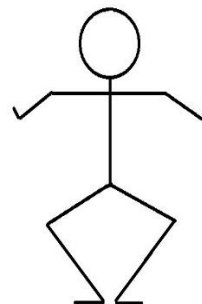


Fig. 2: Posture depicting Poortimandalam/ Poornamandi

This Posture of *Ardhamandala* and *Poortimandala*, as shown in Figure 2, mainly concentrates on the pelvic area, where there is hip rotation followed by contraction of the adductors, thus helping in pelvic widening and toning the muscles. This posture is having more benefits as squatting and semi squatting position. Inculcation of classical dance protocol in the *garbhini paricharya* will definitely have beneficial effect on the pregnancy outcomes, especially aiding the normal vaginal

delivery. To have more clarity on this hypothesis a retrospective observational study was conducted on the *Bharatanatyam* dancers who have already given birth to a child.

### **Materials and Methodology:**

**Study Design:** This research employed a retrospective, observational study design to assess the impact of classical dance, specifically the "Aramandi" posture, on the process of childbirth.

The study involved 18 and 50yrs, 35 classical dancers practicing *Bharatanatyam* for more than 5 years, who have delivered at least 1 child was considered for this survey study. Purposive Snow ball sampling technique was adopted for the sample collection. A questionnaire was sent in google form format and subjects were asked to fill it. The link of the Googleform as follows-

<https://forms.gle/FYZwBcdpJf4pRpYM9>

The collected response data is then statistically analyzed.

### **Results:**

- Duration of the Bharatanatyam practice- Among 35 participants, 62.5% were practicing Bharatanatyam for >15years, 20%

for 10-15 years, 11.4% for 5-10years, 5.7% for <5years.

- Majority of the participants were professional dancers and were practicing for >15 years. (62.5%)
- Practicing *Bharatanatyam* during Pregnancy- 65.7% were practicing during pregnancy and 34.3% did not practice during the pregnancy.
- Modification or stopping dance practice during the pregnancy- 34.3% did not practice during pregnancy, 17.1% modified or stopped dance practice during 1-3months of pregnancy, 14.3% during 3-6months and 34.3% in the last trimester.
- Frequency of the dance practice- 34.3% did not practice, 40% were practicing weekly once and 25.7% were practicing once in a month.
- Increase in physical strength and endurance – 37.1% did not experience increase in physical strength and endurance where as 62.9% did experience increase in physical strength and endurance during practice.
- Increasing the flexibility- 62.9% of the practitioners felt that dance

practice had an impact on their flexibility where as 37.1% did not find any impact.

- Impact on Cardiorespiratory health- 68.6% of the dance practitioners were benefitted with improved cardiorespiratory strengthening, where as 31.4% did not find the impact.
- Emotional wellbeing and stress reduction- 91.4% of the dance practitioners had positive impact of the dance in maintaining emotional wellbeing and stress reduction where as 8.6% did not find it useful.
- Pregnancy outcome- Among the 35 respondents, 62.9% (22) had undergone normal vaginal delivery, 28.6% (10) had undergone C-Section and 8.6% (3) had undergone assisted vaginal delivery. Among 25 respondents who had vaginal delivery, 20 (80%) participants had 1st stage <12 hr3 (12%) participants had 1st stage 12-18hrs, 2 (8%) participants had 1st stage >24hrs
- Condition of the baby after delivery- Among 35 respondents 91.4% (32) of babies were healthy and 8.6% (3) babies had medical issues. 5.7% (2)

babies was underweight i.e.<1.5kg, 34.3% (12) babies were with 1.5-3kg birth weight, 60% (21) babies were of >3kg birth weight.

### **Discussion:**

The pelvic floor muscles assist with urinary, defecatory and sexual function. It is important that these functions require timely muscular. It is increasingly recognized that impaired relaxation and/or paradoxical contraction of these muscles while bladder and/or rectum contracts can result in various symptoms, such as impaired voiding or defecation. It has been shown that pelvic floor muscles may exhibit voluntary or reflex contractions in response to pain, and labour itself is a painful experience. Oxytocin is commonly used for the induction and augmentation of uterine contractions (UC) and such an induced labour may be more painful for woman.[1]

It is recommended that healthy pregnant women should undertake moderate physical activity for 30 minutes on most days of the week throughout pregnancy [2]. During pregnancy, usually woman tends to reduce their physical activities, which in turn will hamper the muscle tone and decreases the cardiopulmonary strength. Studies have shown that regular exercise

will have a positive outcome on the labour [3-5]. Inclusion of the classical dance form like Bharatanatyam, which have semi sitting posture as its base, will provide additional benefit with increasing the pelvic strength, tone of glute and thigh muscles.

Among the 35 respondents, 25 underwent vaginal delivery and 10 were opted for C-section. The reason for planning C- Section was due to medical condition like placental abruption, emergency C-section due to cord around the neck and failure to decedence of the fetus. Majority of the classical dance practitioners had vaginal delivery.

Major participants have opined that dance practice or watching dance had impact on

their physical endurance. Dance being a physical exercise, when introduced among the pregnant woman will impact the circulation thereby enhances the outcome of labour in easy way.

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