The Effect of Kinetic Rhythm on Pain, Anxiety and Labor Progress among primipara Women

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Abstract: The mechanisms of normal labor known as the cardinal movements, involve changes in the position of the fetus's head during its passage in labor. **Aim of the study** was to evaluate the effect of Kinetic Rhythm on Pain, Anxiety and labor progress among primipara Women **Design:** Quasi-experimental study design two group (control &study) was used. **Setting:** The study was conducted in labor unit of Obstetrics & Gynecology Hospital - Ain Shams University, Egypt. **Sample:** A purposive sample of 100 women (50 control group & 50 study group) was selected according to inclusion and exclusion criteria. **Tool:** Data was collected through 4 tools Tool I: A structured interviewing questionnaire tool II: A Visual Analogue Scale of women pain during labor. Tool III: Visual Facial Anxiety Scale used to assess anxiety level during labor tool VI: maternal and fetal wellbeing sheet (partogram) **Results:** the control group had a significantly higher mean duration of the first stage of labor compared to the study group. There were also highly statistically significant differences between the two groups in terms of pain and anxiety during the active phase after applying kinetic rhythm. (40%) of study group had mild labor pain at cervical dilatation (8cm) while control group had moderate labor pain. Also, (36%) of study group had mild-moderate anxiety at cervical dilatation (8cm) compared to (38%) of control group had moderate high level. **Conclusion:** The use of kinetic rhythm improve pain and anxiety levels during labor, as well as promoting labor progress among primiparous women. The findings suggest that incorporating kinetic rhythm techniques into labor management can be an effective intervention to improve the overall labor experience by enhancing comfort and reducing psychological distress, ultimately facilitating more efficient labor progression. **Recommendations:** provide training program at the late third trimester for women and their relatives about the benefits and how to use the kinetic rhythm during first stage of labor with different anatomical positions.

Keywords: Anxiety, kinetic rhythm, labor, pain, primipara women.

1. INTRODUCTION

Normal labor is the natural process through which a woman gives birth, involving the regular progression of uterine contractions that lead to the dilation of the cervix. It typically begins with the onset of mild contractions, which gradually increase in intensity and frequency. As labor progresses, the cervix dilates fully, allowing the baby to move through the birth canal. The first stage of labor consists of latent and active phases, followed by the second stage, which involves the delivery of the baby. The third stage involves the delivery of the placenta. Normal labor is characterized by a steady and predictable progression without the need for medical intervention unless complications arise **(Xiaoqing, 2025).**

Primipara women are individuals who are experiencing their first pregnancy and childbirth. This group often faces unique challenges due to inexperience with labor and delivery, making the birthing process more unfamiliar and potentially anxiety-inducing. They may have different expectations and concerns compared to multiparous women, leading to higher levels of anticipation and uncertainty. The physiology of labor in primipara women may differ from subsequent pregnancies, with labor potentially being longer and more intense. Healthcare providers often offer additional support and education to help manage the physical and emotional aspects of labor. Understanding the specific needs of primipara women is essential for improving maternal care and enhancing the birthing experience **(Zhi-Rong, et al 2025).**

Pain during labor is a natural yet intense experience caused by uterine contractions, cervical dilation, and the pressure exerted by the baby's descent through the birth canal. The intensity of labor pain can vary depending on factors such as the stage of labor, the baby's position, and the mother's pain threshold. It is often described as a combination of cramping, pressure, and stretching sensations. The emotional state and anxiety of the mother can further amplify the perception of pain. Pain management strategies, including pharmacological and non-pharmacological approaches, are commonly employed to provide relief. Effectively addressing labor pain is crucial for improving maternal comfort and the overall labor experience **(Weinstein, et al 2025).**

Stress and anxiety can lead to headaches, upset stomach, aches and pains, insomnia and low immune responses. However, other, more severe issues including preeclampsia, high blood pressure, premature birth, and low birth weight can result from stress and worry during pregnancy. Pregnant women normally feel some anxiety about labor. Many women are concerned about the baby's health, the possibility of pain and discomfort, or whether they will require a cesarean surgery or an epidural. nulli para women might feel even more anxious **(Ataş, and Özerdoğan, 2025).**

A variety of kinetic exercises strategies used to cope with pain during labor such as, walking, sitting on the birth ball, yoga and more but one of the most influential movement is rhythmic. Rhythmic movement targets the autonomic nervous system, which controls how pain feel. When in labor body triggers sympathetic nervous system due to the stress the body is under, which controls fight, flight or freeze mechanism, which sharpens senses, including pain. Rhythmic movement relaxes muscles and taps into nervous system **(Mane, 2024).**

Nurses play a crucial role in supporting women during labor, especially when incorporating rhythmic exercises into the process. Rhythmic exercises, such as deep breathing or slow-paced movements, can help manage pain and reduce stress by promoting relaxation. Nurses guide patients through these techniques, ensuring that they are comfortable and empowered throughout labor. They provide continuous monitoring, assessing the mother's progress and adjusting exercises as needed. Additionally, nurses offer emotional support, fostering a calm and positive environment. They also collaborate with the healthcare team to ensure the best possible care. By integrating rhythmic exercises, nurses contribute to a more positive birthing experience and improved maternal well-being **(Palmei, 2024)**.

Significant of the study

In 2024, a study conducted at the Labor and Delivery Unit of Al-Amriya General Hospital in Alexandria, Egypt, found that most primi parous women experienced significant labor pain, often describing it as severe or intolerable, particularly in the lower abdomen and back following childbirth. The study revealed that the use of a birthing ball and breathing techniques effectively alleviated both pain and anxiety during labor. Notably, these methods, which involve rhythmic movements, showed a substantial reduction in both pain and anxiety levels. As a result, the study suggests that rhythmic exercises, such as those involving the birthing ball and breathing exercises, may be an effective, affordable, and accessible approach to managing pain and anxiety during labor. **(Hasanin, et al 2024).**

In Indonesia, 75% of primiparous women claimed that the pain and discomfort they experienced after childbirth was intense or unbearable. Ninety-six percent of primiparous women reported that their lower abdomen was the source of their pain, followed by their hips and thighs, with almost half (49.06%) reporting moderate pain. Additionally, 88% of primiparous women reported feeling bored and 90% reported cramps of primiparous women in labor, 37% reported severe labor pain, 52.9% reported moderate labor pain, and 10.1% reported bright labor pain. This is greater than the rate of severe pain reported by 20.7% of multiparous women. In addition to parity, cervical dilatation, and uterine contractions, a variety of demographic and obstetrical factors might affect labor pain. **Desmawati, et al 2021).**

Therefore highlights about non pharmacological for pain such as kinetic rhythm to evaluate the effect of kinetic rhythm on pain, anxiety and labor progress among primipara women.

2. AIM OF THE STUDY

Aim of the Study:

The aim of the current study is to evaluate the effect of kinetic rhythm on pain, anxiety and labor progress among primipara women.

The aim will be achieved through the following objectives.

1- Assess women's pain during first stage of labor.

2- Assess women's anxiety during first stage of labor.

3- Assess women's labor progress during first stage of labor.

4- Evaluate the effect of kinetic rhythm on pain, anxiety and labor progress during first stage of labor.

Research hypothesis

With performing kinetic rhythm women's labor pain, anxiety and labor progress will be improving.

Theoretical definition:

Kinetic rhythm are physical activities or movements designed to enhance a person's sense of rhythm, coordination, and timing. These exercises often involve moving the body in sync with a specific rhythm or pattern, helping individuals develop a better understanding of how to move in time with music or beats.

Research design:

Quasi-experimental study design (control &study) group used.

Study setting:

The study was conducted in labor unit at Obstetrics & Gynecology Hospital - Ain Shams University. Also labor department include three basic rooms (antenatal room, induction room and post-operative room), four operation room for normal delivery and five for cesarean section. All rooms equipped with required facilities. The hospital serves a large number of neighboring areas, and it is well-equipped and easily accessible.

Sample type: A purposive sample selected according to inclusion and exclusion criteria.

Sample size: The sample size was (100) primipara women who are attended to the antenatal room for delivery and accepted to participate in the study during the 6 months period and were within the following inclusion criteria.

Inclusion criteria:

- Age 18-35 years.

- Primipara women with single fetus.

- Fetal with cephalic presentation.

Exclusion criteria:

- Multipara women

- High risk primigravida women

- Women with cesarean section

Data collection tool

Four tools are used:

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Tool (1) a structured interviewing questionnaire

A structured interviewing questionnaire designed by researcher based on literature review **(William, 2020)**. with Arabic language it include:

Part I: General characteristics:

To assess demographic data for the primipara women as age, educational status, employment status.

Part II: primipara obstetric history questionnaire:

It was used to assess data about initial assessment on admission such as obstetric gynecological history and present pregnancy, gestational age of present pregnancy.

Tool (2): A Visual Analogue Scale

A Visual Analogue Scale (VAS) used to assess women pain degree during labor with English language. adopted from **(McCaffery& Beebe., 1989)** that indicate the intensity of current, best, and worst pain levels over the labor on a scale of 0 (no pain) to 10 (worst pain imaginable)"

Scoring system: is determined by measuring the distance (mm) on the 10-cm line between the "no pain" anchor and the woman mark, providing a range of scores from 0–100. A higher score indicates greater pain intensity. Described their pain intensity as none, mild, moderate, or severe, the following cut points on the pain VAS have been recommended: no pain (0–4 mm), mild pain (5-44 mm), moderate pain (45–74 mm), and severe pain (75–100 mm).

Tool (3): Visual Facial Anxiety Scale

Visual Facial Anxiety Scale (VFAS) adopted from **(Xuezhao 2017)** with English language. The VFAS has six facial expressions. It is particularly useful in clinical, psychological, and research settings where verbal self-reporting may be difficult. Scored from 0 to 5; a higher score indicates a higher level of anxiety. Scoring (1) rank the 6 faces from 0–5 (0 = no anxiety, while 5 = highest anxiety) and then to (2) match one of the 6 facial expression with a numeric verbal rating scale (NVRS) (0 = no anxiety and 5 = highest level of anxiety) and a specific categorical level of anxiety, namely no anxiety, mild, mild-moderate, moderate, moderate-high or highest anxiety.

Tool (4): Maternal and fetal wellbeing sheet (partogram)

A partogram is a composite graphical record of key data (maternal and fetal) during labor entered against time on a single sheet of paper with English language adopted from **(Lavender2018)**. It is a standardized tool used in obstetrics to monitor labor progress and maternal-fetal well-being. It provides a visual representation of critical clinical parameters, including cervical dilation, fetal heart rate, contractions, maternal vitals, and other labor indicators. The partogram helps healthcare providers make timely decisions regarding labor management, identifying abnormalities early to prevent complications such as prolonged labor, fetal distress, and maternal exhaustion. The partogram is typically divided into three main sections:

1. Fetal Monitoring

   - Fetal heart rate (recorded in beats per minute).

   - Presence of amniotic fluid (clear, meconium-stained, or absent).

   - Molding of the fetal head (degree of skull bone overlap).

2. Labor Progression

   - Cervical dilation (measured in cm and plotted against time).

   - Descent of the fetal head (station in relation to the ischial spines).

   - Uterine contractions (strength, frequency, and duration).

3. Maternal Condition

   - Maternal pulse, blood pressure, and temperature.

   - Urine output and presence of ketones or proteinuria.

   - Use of medications and intravenous fluids.

Validity and reliability:

- **Visual analogue scale:** R = 0.70 - 0.90 (good to excellent reliability), **Internal consistency** (less commonly used for VAS): R = typically not measured as VAS is unidimensional.

- **Visual facial anxiety scale:** R = 0.75 - 0.90 (good to excellent).

- **Maternal and fetal wellbeing sheet (partogram): Test-retest reliability** (ICC): R = **0.80 - 0.90** (good to excellent).

Supportive material: the researcher prepared Arabic booklet that contain (kinetic rhythm and its advantage, and effect of kinetic rhythm on pain, anxiety and labor progress)

Ethical consideration

The approval of the current study obtained by the ethics and research committee in the faculty of nursing, Helwan University. Committee No. (32)11/2022. Official permissions to conduct the study were secured. All primipara women gave their informed written consent to participate in the study sample. The primipara women were informed about the study purpose, and about their rights to refuse or withdraw without giving reasons. They were reassured about the anonymity of the information collected, and that it would be used only for the purpose of scientific research.

Pilot study

A pilot study was conducted on 10% of subject of total duration of data collection six months and 10% equal four days per two weeks (**10 women: 5 control and 5 study women**). The aim of the pilot study was to determine the clarity, feasibility and applicability of the study tools, and estimate the time needed for completing the questionnaires and also to test the clarity of questions and simplicity of language. Participants of pilot study were included to the study sample.

A) Field work:

The current study was carried out in the period from January 2023 to June 2023. It included three phases; (assessment phase, implementation phase, and evaluation phase).

Phase one; assessment phase:

During this phase, the researchers interviewed the women to gather the socio-demographic data by using tool I, The researcher meets all primigravida women and designated to either study group or control group. The baseline data required about the labor status, for example dilatation of the cervix, fetus head descent were considered at enrollment in the two groups through the utilization of the fourth tool, recorded the pain level utilizing the second tool.

Phase two; implementation phase:

Based on the work completed in phase one, the researcher performed the procedure as follow after reviewing the current practice, the related literature and similar clinical practice for using the kinetic rhythm **.**The researcher attended the previously mentioned setting two days per week from 10:00 am to 3:00 pm until the calculated and completed sample size was obtained at labor unit of Obstetrics & Gynecology Hospital at Ain Shams University. This study was carried out in the period from January 2023 to June 2023. Firstly, the researcher introduced herself to primipara women and obtained their written informed consent to participate in the study after explanation of the aim for each studied woman.

The total study sample 100 primipara women divided into equal number for two groups as follow: The first 50 primipara women assigned to control group while the second 50 primipara women assigned to a study group. The study group received kinetic rhythm exercises at labor unit of Obstetrics & Gynecology Hospital at Ain Shams University. The researcher prepared training room at setting to demonstrate kinetic rhythm exercises for primipara women. Firstly, women were given face-to-face instructions about how to utilize kinetic rhythm for exercising and were provided with video presentations. The researcher showed Pictures are included in the booklet and explain to the pregnant women what should to do during the session .kinetic rhythm consist of many exercises that primipara women can do without any complication for her or her fetus in 4 positions (sitting, standing, lying, and squatting) . primipara women do some exercises in standing position and when feel tired can take a break and then the researcher can change position in sitting or lying .and this depend on every women afford .

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Secondly, the researcher practiced kinetic rhythm exercises in front of primipara women in order to teach them how to do it and asked them to remonstrate in front of the researcher. Then the researcher observed all study group to prevent any complications occur, In addition, an educational booklet was given to pregnant women in the study group. Women received routine care in control group only offering them but no kinetic rhythm.

Phase three; Evaluation phase:

The researchers follow and evaluated the labor progress (cervical dilation, fetal head descent, duration of first, second stage of labor and labor mode) of women in both groups every hour by using the Partograph (tool IV), and Tool II to assess the pain Score. As well as using tool III during first stage to assess anxiety level.

Statistical design

Data was coded and transformed into specially designed form to be suitable for computer entry process. Data was entered and analyzed by using SPSS (Statistical Package for Social Science) statistical package version 22. Graphics were done using Excel program.

Quantitative data were presented by mean (X) and standard deviation (SD). It was analyzed using student t- test for comparison between two means, Qualitative data were presented in the form of frequency distribution tables, number and percentage. It was analyzed by chi-square (χ2) test. However, if an expected value of any cell in the table was less than 5, Fisher Exact test was used(if the table was 4 cells) , Level of significance was set as P value <0.05 for all significant tests.

3. RESULTS

Table (1) showed that (44% & 48%) of the primipara women age were (28- 32) with mean (28.24±4.64 and 27.34±4.40) for study and control group, separately. Additionally, (68% & 76%) of the primipara women's were employee with (64% & 62%) had secondary education for study and control group, separately. As well, regarding the gestational age (weeks); (56%) of the study group were (37-39) and (52%) of control group were (40-42) weeks, separately.

Figure 1. Shows that the total Mean and SD of gestational age among women in both study and control groups were 39.60±1.44 and 39.44±1.52 weeks respectively.

Table (2) presented that (74% &78%) of the primipara women had mild labor pain on admission cervical dilatation (5cm) for study and control group, separately. Additionally, (82% & 64%) of the primipara women had mild labor pain at cervical dilatation (6cm) for study and control group, separately. Furthermore, (80%) of study group had moderate labor pain at cervical dilatation (8cm) while control group had mild labor pain.

Table (3) presented that (48% &52%) of the primipara women had mild-moderate anxiety on admission cervical dilatation (4cm) for study and control group, separately. As well, (62% &40%) of the primipara women had mild-moderate anxiety on admission cervical dilatation (6cm) for study and control group, separately. Also, (36%) of study group had mild-moderate anxiety at cervical dilatation (8cm) compared to (38%) of control group had moderate high level.

Table (4) illustrated that the control group had high mean duration of the first stage of labor scores compared to study group with highly statically significant differences between both group at regarding active phase and transition phase.

Table (5) illustrated that there were highly statically significant correlation coefficients between anxiety and labor pain during the 1st stage of labor among women in control group at (at cervical dilatation 4 cm, at

Table (1): Distribution of the studied women in both groups according to general characteristics (n= 100).

General characteristics	Study group n= 50		Control group n=50		FET/X^2	p-value
	No	%	No	%		
Age (years)						
18- 22	7	14.0	10	20.0	1.79$^\epsilon$	0.62 ^{ns}
23- 27	12	24.0	11	22.0		
28- 32	22	44.0	24	48.0		
33-37	9	18.0	5	10.0		
Mean ± SD	28.24±4.64		27.34±4.40		t=0.99	0.322 ^{ns}

Occupation						
Employee	34	68.0	38	76.0	0.794	0.373 ns
Housewife	16	32.0	12	24.0		
Educational level						
Can't read and write	2	4.0	3	6.0	0.849^{ϵ}	0.863 ns
Primary education	5	10.0	7	14.0		
Secondary education	32	64.0	31	62.0		
High education	11	22.0	9	18.0		
Gestational age (weeks)						
37-39	22	44.0	26	52.0	0.641	0.423 ns
40-42	28	56.0	24	48.0		
Mean ± SD	39.60±1.44		39.44±1.52		t=0.538	0.591 ns

Chi-square test (x2); $^{\epsilon}$ Fisher Exact Test; t= independent t test ,^{ns} no statistical significant difference (p > 0.05)

Figure (1). Mean and SD of gestational age among both study and control groups (n=100)

Table (2): Distribution of labor pain among studied women in both groups during first stage of labor (n=100).

Variable	Study group n= 50		Control group n=50		FET	P value
	No	%	No	%		
On admission (4cm)						
No pain	0	0.0	0	0.0	1.05^{ϵ}	0.815
Mild pain	37	74.0	39	78.0		
Moderate pain	12	24.0	11	22.0		
Sever Pain	1	2.0	0	0.0		
At cervical dilatation (6cm)						
No pain	0	0.0	0	0.0	5.87^{ϵ}	0. 04*
Mild pain	41	82.0	32	64.0		
Moderate pain	9	18.0	14	28.0		
Sever Pain	0	0.0	4	8.0		

At cervical dilatation (8cm)						
No pain	0	0.0	0	0.0	6.47$^\epsilon$	0.04*
Mild pain	20	40.0	9	18.0		
Moderate pain	19	38.0	22	44.0		
Sever Pain	11	22.0	19	38.0		

$^\epsilon$ Fisher Exact Test; ^{ns} no significant difference (p > 0.05); * statistically significant difference (p ≤ 0.05)

Table (3): Distribution of anxiety among studied women in both groups during first stage of labor (n=100).

Variable	Study group n= 50		Control group n=50		FET	P value
	No	%	No	%		
On admission (4cm)						
Mild	19	38.0	21	42.0	1.82$^\epsilon$	0.636
Mild-moderate	24	48.0	26	52.0		
Moderate	5	10.0	2	4.0		
Moderate-high	2	4.0	1	2.0		
At cervical dilatation (6cm)						
Mild	11	22.0	9	18.0	9.47$^\epsilon$	0. 01*
Mild-moderate	31	62.0	20	40.0		
Moderate	8	16.0	17	34.0		
Moderate-high	0	0.0	4	8.0		
At cervical dilatation (8cm)						
Mild	7	14.0	3	6.0	11.24$^\epsilon$	0.02*
Mild-moderate	18	36.0	7	14.0		
Moderate	14	28.0	16	32.0		
Moderate-high	9	18.0	19	38.0		
Highest anxiety	2	4.0	5	10.0		

$^\epsilon$ Fisher Exact Test; ^{ns} no significant difference (p > 0.05); * statistically significant difference (p ≤ 0.05)

Table (4): Mean duration of the first stage of labor among studied women in both groups (n=100).

Duration of the first stage of labor	Study group n= 50	Control group n=50	Independent t test	P value
	Mean ±SD	Mean ±SD		
Active phase (hrs.)	5.16±.61	5.62±.83	3.142	0.002*
Transition phase (hrs.)	1.18±0.38	1.44±0.50	2.900	0.005*

t= Independent t; * statistically significant difference (p ≤ 0.05)

Table (5) Correlation coefficients between anxiety and labor pain among women in control group (n=50)

Pain during the 1st stage of labor	Anxiety during the 1st stage of labor					
	Anxiety at cervical dilatation 4 cm		Anxiety at cervical dilatation 6 cm		Anxiety at cervical dilatation 8 cm	
	r	P value	r	P value	r	P value
Pain at cervical dilatation 4 cm	0.451	0.000**				
Pain at cervical dilatation 6 cm			0.472	0.000**		
Pain at cervical dilatation 8 cm					0.503	0.000**

*Highly Statistically significant difference (p≤0.000)

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4. DISCUSSION

Birth is a natural process that can be managed without any medical intervention and is a happy life event for most women. However, some physiological factors (such as uterine contractions), psychosocial factors (such as fear and anxiety) experienced by woman during labor, as well as the cultural practices and acquired knowledge on this subject possibly aggravates the discomfort associated with childbirth pain (3-5). Managing childbirth pain effectively and keeping it under control are therefore important. Childbirth pain is not a natural and inevitable experience for every woman **(Makvandi, et al., 2020).**

The present study aimed to evaluate the effect of Kinetic Rhythm on Pain, Anxiety and labor progress among primi para Women .The finding of the current study showed that about half of the primipara women age were (28- 32) with mean (28.24±4.64 and 27.34±4.40) for study and control group, separately. Additionally, more than two thirds of the primipara women's were employee with about two thirds had secondary education for study and control group.

This finding is on the same line **Demet 2021** who studied "the effect of the birth ball exercise on management of childbirth pain during the first stage of labor in primipara pregnant women" in Turkish reported that the average age of the 60 women who concluded the clinical study was 28.4. Every pregnant woman was a primiparous woman. It was found that half of the women were housewives and about half had college degrees. Additionally, in terms of gestational age (weeks), more than half of the study group was between 37 and 39 weeks, while more than half of the control group was between 40 and 42 weeks. Also **Budi & Ristiana 2022** who studied "Reduction of anxiety and pain in primigravida mothers with modified Iyengar yoga: A clinical study "Indonesia reported that the mean gestational age of the women was 39.6 weeks. This may be all primipara women are primipara.

Regarding labor pain the present study presented that the majority of the study group and control group had mild labor pain on admission cervical dilatation **(4cm)** .Additionally, the majority of study group had mild labor pain at cervical dilatation **(6cm).** While about two thirds of control group had mild pain. Furthermore, more than one third of study group had mild labor pain at cervical dilatation **(8cm)** while control group had moderate labor pain.

which agreed with **Shahbazzadegan & Nikjou 2022** who studied The most appropriate cervical dilatation for massage to reduce labor pain and anxiety in Alavi Hospital in Ardabil city reported that For cervical dilation of 7 cm (p <0.0001), the difference in mean pains between the groups under study was significant; however, for cervical dilatation of 5 cm (p =0.084) and 9 cm (p =0.591), it was not. Massage successfully reduced the severity of pain. on the other hand **Khudhur, & Mirkhan 2020** who studied (Effect of change in position and back massage on pain perception during first stage of labor) Kurdistan Region, Iraq reported that about two thirds of primi parous women reported severe acute labor pain; even after analgesic drugs, about half of laboring women were not satisfied with the pain relief they received .on my opinion because of the variety of exercises that used in the study. This might also reflect individual differences in pain tolerance or coping strategies, and could guide future recommendations for personalized care plans.

The present study presented that about half of the study group and more than of control group had mild-moderate anxiety on admission cervical dilatation (4cm). As well, about two thirds of study group and more than one third of control group had mild-moderate anxiety on admission cervical dilatation (6cm). Also, more than one third of study group had mild-moderate anxiety at cervical dilatation (8cm) compared to more than one third of control group had moderate high level. This result was similar to a previous study **Andro 2024** who studied (Active pelvic movements on a Swiss ball reduced labor duration, pain, fatigue and anxiety in parturient women) which reported that The experimental intervention led to a significant reduction in pain, as measured on a 0-to-10 scale, across several time points. Fatigue also showed a notable decrease, based on a 15-to-75-point scale, while anxiety levels were considerably lowered on an 18-to-72-point scale.

Also with **Shahbazzadegan& Nikjou 2022** claimed that at the beginning of the study, maternal anxiety levels were similar across groups and did not show a significant difference. However, following the massage intervention, anxiety levels in the massage group significantly decreased, shifting from a high level of anxiety to a more moderate level by the end of the study. In contrast, anxiety levels in the control group showed a slight increase over the same period. After searching for many articles I did not find any opposing research on the effect of kinetic rhythm, natural childbirth, and anxiety. I believe that using these movements with stimuli works to distract attention and reduce anxiety. As a fact **Jasper& Michael 2025** said in text book that Rhythmic exercises, including activities like dance or structured movement routines, are widely

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recognized for their ability to reduce anxiety through multiple mechanisms. These exercises promote relaxation by engaging the parasympathetic nervous system, reducing physiological markers of stress such as heart rate and muscle tension. The repetitive nature of rhythmic movement also encourages mindfulness, allowing individuals to focus on the present moment and distract from anxiety-provoking thoughts. Additionally, rhythmic exercises stimulate the release of endorphins, enhancing mood and overall well-being.

This study results illustrated that the control group had high mean duration of the first stage of labor scores compared to study group with highly statically significant differences between both group at regarding active phase and transition phase. Also, **Sidar 2024** has claimed that Mothers in the experimental group had shorter first-stage labor duration, less epidural analgesia, and fewer caesarean deliveries than the control group (The duration of the 1st, 2nd, and 3rd stage of labor elucidates a high significantly shorter duration among the study group than the control group). On the other hand **El Refaye 2024** reported that there was no difference in the duration of the first stage of labor, mode of delivery (vaginal, cesarean, or instrumental), and maternal anxiety. This may be due to using only breathing exercises during labor but in my study can use more than one strategy.

According to the present study findings there were highly statically significant positive correlation coefficients between anxiety and labor pain during the 1st stage of labor among women in control group at (at cervical dilatation 4 cm, at cervical dilatation 6 cm, and at cervical dilatation 8 cm). and **Ahmed 2023** showed that There was a nonsignificant difference between group A and group B in pain intensity using VAS in the first stage of labor at the first reading (cervical dilatation: 3–4cm). However, there was a highly significant difference between group A and group B in the pain intensity using VAS in the first stage of labor at the second reading (cervical dilatation: 7–8cm), favoring group A. Furthermore, there was a highly significant difference between group A and group B in the anxiety of the first stage of labor, favoring group A. This a fact as **Usha 2024** reported that using auditory stimulation such as music and certain environmental sounds for the relief of labor pain. The woman gets to choose the music she wishes to listen during labor, but there is no evidence to show that audio analgesia gives effective pain relief. Non pharmacological methods don't give effective pain relief during labor but may help in coping with the pain better as it may enhance the feeling of wellbeing woman can ultimately combine the two methods during the process of labor. So from point of view this effective in this study because of combination of methods.

5.   CONCLUSION

Based on the results of the present study, can be concluded that The use of kinetic rhythm improve pain and anxiety levels during labor, as well as promoting labor progress among primiparous women. The findings suggest that incorporating kinetic rhythm techniques into labor management can be an effective intervention to improve the overall labor experience by enhancing comfort and reducing psychological distress, ultimately facilitating more efficient labor progression. Which achieve the current study aim and support the research hypothesis.

6.   RECOMMENDATION

Based on the study finding, the following recommendations were suggested:

- Provide training program at the late third trimester for women and their relatives about the benefits and how to use the kinetic rhythm during first stage of labor with different anatomical positions.

- Replicate this study with a more diverse sample population, considering variables such as cultural practices, socioeconomic status, and access to care. Additionally, studies in different healthcare settings (e.g., home births, community clinics, or high-risk obstetric units) could determine whether kinetic rhythm has similar benefits across varying environments and populations.

Further Studies

- Develop training program for nurses and midwives to guide and support primipara women in utilizing rhythmic movements or exercises. These practitioners can play a pivotal role in facilitating the adoption of these techniques, offering reassurance and encouraging participants to remain engaged in the process.

- Integrate Nursing curricula with courses that focus on non-pharmacological pain management techniques, including kinetic rhythm exercises, to better prepare nursing students for modern labor and delivery practices. Training should include both theoretical knowledge and practical skills for implementing rhythmic interventions in the clinical setting.

- Enhance practical skills of nurses and improves their confidence in integrating these techniques in real-world settings through Simulation-based learning which an effective tool for nursing education, offering students hands-on practice in guiding patients through rhythmic exercises during labor.

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