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Effectiveness of Peanut Ball On Outcome of First Stage of Labour Among Primi Mothers in Selected Tertiary Care Hospital, Coimbatore

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***Abstract*: Childbirth is one of the most marvelous and memorable segment in a woman's life. Pain during labour is different for every woman. The peanut ball usage during first stage of labour is highly considered as a powerful, secure and easy method of promoting the progress of labor and relieving pain. A quantitative study was conducted to evaluate the effectiveness of peanut ball on outcome of first stage of labour among primi mothers. By using purposive sampling technique 30 samples were selected followed by interventions was given to Interventional group and routine care given to routine care group. Posttest was assessed by observation method. In that Interventional group posttest, mean score was 1.13 ± 1.67 whereas in routine care group posttest mean score was 1.73 ± 3.33 with 't' value of 3.43 which is significant at p<0.05. Peanut ball was effective in reduction of pain perception, duration of first stage of labour and promotes positive labour outcomes.**

***Keywords*: Peanut ball, Primi mothers, First stage of labour, Pain perception, Labour outcomes.**

1. Introduction

Pregnancy is a unique, exciting and often joyous time in a woman's life. Labour is a physiologic process during which the fetus, membranes, umbilical cord, and placenta are expelled from the uterus.

Globally, approximately 140 million births occur every year. In India, with increase in institutional deliveries there has also been an increase in cesarean section births. There are many cases, after induction of labour the mother experiences labour process for about 7-8 hours. So controlling all such difficulties and discomforts which can arise during the first stage of labour, a peanut ball usage has been introduced to cut short the duration of first stage of labour and promote comfort during progression of labour.

The peanut ball is potentially a successful Nursing intervention to help in progress of labour and support vaginal birth for women labouring under epidural analgesia. Using the peanut ball promotes spinal flexion, thus increasing the utero-spinal angle. This widening of the pelvic diameter subsequently assists in facilitating occiput posterior rotation to a more favourable position for delivery. The use of a peanut ball might promote positive labor outcomes as well as hopefully reduce the duration of the delivery process.

A. Objectives

- To determine the effectiveness of peanut ball on outcome of first stage labour among primi mothers in interventional and routine care group.
- To associate the duration of first stage of labor among primi mothers in interventional group and routine care group with selected demographic variables.

B. Hypothesis

- H1: There will be a significant difference in outcome of first stage of labour after use of peanut ball among primi mothers in interventional and routine care group
- H2: There will be a significant association between selected demographic variables with first stage of labor after use of peanut ball among primi mothers in interventional and routine care group.

2. Methodology

The research approach is quantitative research approach and the design adapted is true experimental with Post- test only control group design. Based on inclusion criteria 30 Primi mothers were selected by purposive sampling method. Sample size calculated by using degree of precision method. In this interventional group consists of 15 primi mothers who received peanut ball and routine care group consists of 15 primi mothers who received routine care. The study was conducted in labour ward, PSG Hospital. The socio demographic and obstetrical profiles were collected through face to face interview and from records. The level of pain assessed through visual analogue pain rating scale and duration of first stage of labour, Nature of delivery assessed through observation method. Posttest was assessed after the intervention and pain level was assessed after 4 cm, 6 cm, 8 cm and 10 cm cervical dilatation.

3. Data Analysis and Interpretation

The figure 1, shows majority of the mother (66.67%) in the interventional group falls between the age group of 26 – 31 years with the height of 156 – 165cm, 46.6% mothers belongs

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to 38 & 39 weeks of gestation and all of them (100%) used 50 cm length of the ball.

Whereas in routine care group, majority (60%) of the mothers falls between the age group of 26 – 31 years, 53.4% mothers belong to 38 weeks of gestation, most of the mothers (79.9%) with the height of 156 – 165cm and all of them (100%) used 50 cm length of the ball

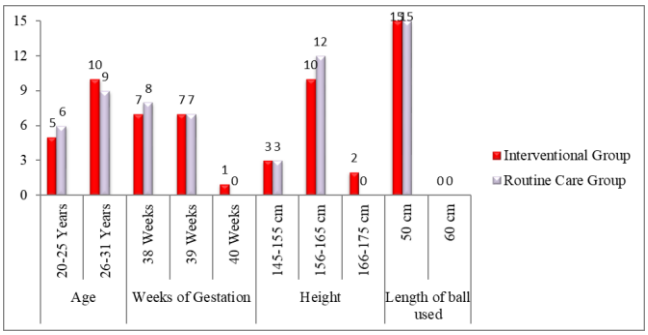

Fig. 1. Frequency and percentage distribution of demographic variables (N=30)

The figure 2, shows that the mean and standard deviation in experimental group is lesser than the control group and the table value 0.0009 is less than the calculated value 3.43 at $p < 0.05$. So the research hypothesis was accepted. The findings concluded that peanut ball was effective in shortening the duration of first stage of labour among primi mothers.

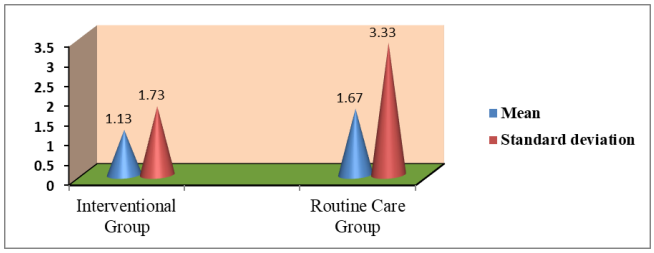

Fig. 2. Mean and standard deviation to analyze the effectiveness of outcome of peanut ball on duration of first stage of labour among primi mothers (n=15) The result is significant at the level of $p < 0.05$.

Table 1
Mean and standard deviation to analyze the effectiveness of outcome of peanut ball on pain level of first stage of labour among primi mothers

	Group	Mean	Standard Deviation	Independent 't' Test	Table Value
4cm	Interventional	1.6	0.50709	4.99454*	2.05
	Routine care	2.53333	0.5164		
6cm	Interventional	1.6	0.50709	4.99454*	
	Routine care	2.53333	0.5164		
8cm	Interventional	1.6	0.50709	4.99454*	
	Routine care	2.53333	0.5164		
10cm	Interventional	1.6	0.50709	4.99454*	
	Routine care	2.53333	0.5164		

The result is significant at $p<0.05$

The table 1 shows that the table value 2.05 is less than the calculated value 4.99 at $p<0.05$. So the research hypothesis was accepted. The findings concluded that peanut ball was effective in reduction in level of pain during first stage of labour among primi mothers.

Table 2
Association between selected demographic variables and pain in the first stage of labor after the use of peanut ball among primi mothers in interventional and control group using chi square test

S. No.	Cervical dilatation	Demographic variables	Pain level in the Interventional group		df	Cal χ^2 value	Tab value	Pain level in the routine care group		df	Calculated χ^2 value	Tabulated value
			Mild	Moderate				Moderate	Strong			
1	4cm	Age 20 – 25	2	3	1	**0.038**	**3.84**	5	1	1	**3.225**	**3.84**
		26 - 31	3	7				2	7			
	6cm	20 – 25	2	3	1	**0.313**	**3.84**	5	1	1	**3.225**	**3.84**
		26 - 31	4	6				2	7			
	8cm	20 – 25	2	3	1	**0.313**	**3.84**	5	1	1	**3.226**	**3.84**
		26 - 31	4	6				2	7			
	10cm	20 – 25	2	3	1	**0.038**	**3.84**	5	1	1	**3.226**	**3.84**
		26 - 31	3	7				2	7			
2.	4cm	Weeks of the gestation <39 weeks	2	5		**0.100**	**3.84**	2	6	1	**1.637**	**3.84**
		>39 weeks	4	4	1			5	2			
	6cm	<39 weeks	2	5	1	**0.656**	**3.84**	2	6	1	**1.637**	**3.84**
		>39 weeks	5	3				5	2			
	8cm	<39 weeks	2	5	1	**0.100**	**3.84**	2	6	1	**1.637**	**3.84**
		>39 weeks	4	4				5	2			
	10cm	<39 weeks	2	5	1	**0.33**	**3.84**	2	6	1	**1.637**	**3.84**
		>39 weeks	3	5				5	2			
3.	4cm	Height 145 – 159 cm	2	4	1	**0.063**	**3.84**	5	5	1	**0.033**	**3.84**
		160 – 175 cm	4	5				2	3			
	6cm	145 – 159 cm	2	4	1	**0.063**	**3.84**	5	5	1	**0.033**	**3.84**
		160 – 175 cm	4	5				2	3			
	8cm	145 – 159 cm	2	4	1	**0.063**	**3.84**	5	5	1	**0.033**	**3.84**
		160 – 175 cm	4	5				2	3			
	10cm	145 – 159 cm	2	4	1	**0.208**	**3.84**	5	5	1	**0.033**	**3.84**
		160 – 175 cm	3	6				2	3			

The result is significant at the level of $p<0.05$

Table 3
Association between selected demographic variables and duration of the first stage of labor after the use of peanut ball among primi mothers in interventional and routine care group using chi square test

S. No.	Demographic variables	Duration of the labor		df	Cal χ^2 Value	Tab χ^2 value	Duration of the labor		df	Cal χ^2 value	Tabulated value
		Normal	Moderate				Normal	Moderate			
1.	Age 20 - 25	3	1	1	0.003	3.84	2	4	1	0.312	3.84
	26 - 31	10	1				3	6			
2.	Weeks of the gestation <39 weeks	6	1	1	0.435	3.84	4	4	1	0.100	3.84
	>39 weeks	7	1				2	5			
3.	Height 145 – 159 cm	5	1	1	0.216	3.84	4	6	1	0.037	3.84
	160 – 175 cm	8	1				1	4			

The table 2 shows that there was no significant association between the selected demographic variables and pain in the first stage of labor after the usage of peanut ball among primi mothers in interventional and control group. Hence H_2 was rejected.

The table 3 shows that there was no significant association between the selected demographic variables and duration in the first stage of labor after the usage of peanut ball among primi mothers in interventional and control group. Hence H_2 was rejected.

4. Conclusion

The study concluded that peanut ball was effective in reduction of pain perception and promotes positive labour outcomes. The study participants, who underwent intervention, expressed more satisfaction compared to routine care group. As a nurse we should educate and encourage the mother to use peanut ball during first stage of labour to improve labour outcomes.

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