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Original Research Article

A study to assess the effectiveness of prone position on afterpains among postnatal women admitted in postnatal wards in Government Doon Medical College and Hospital Dehradun, Uttarakhand

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ABSTRACT

Background: Afterpains are the irregular, spasmodic pains experienced in the lower abdomen between two and four days after delivery. The uterus contracts after delivery as it returns approximately to its pre-pregnancy size and position, resulting in these abdominal cramps.
Methods: Quasi experimental, non-equivalent control group pre-test-post-test design was used to conduct the study at govt. Doon medical college and hospital, Dehradun. A total of 70 primi postnatal women were taken by using non-probability purposive sampling technique, following particular inclusion and exclusion criteria. The duration of the data collection was 4 weeks, from June 2023 to July 2023. Descriptive and inferential statistics was used to analyse the collected data.
Results: The study revealed that the mean±SD of level of pain was 3.00±1.572 in experimental group and 4.89±1.183 in control group. The mean difference was 1.886 and calculated t=5.672 and p=.00001 hence the results is significant at p<0.001 level.
Conclusions: It is concluded that after intervention there was significant difference between the pre-test level of afterpains and post-test level of afterpains in experimental group compared to control group.

Keywords: Effectiveness, Afterpain, Prone position, Postnatal women

INTRODUCTION

Pregnancy is a long and extremely important experience in a woman's life. The path of becoming a mother, of altering family ties, and of accepting the long-term duty for caring for a new born baby involves tremendous physical, psychological, and social change. Women have taken the same route for generations, yet each journey is different.[1]

There are various stages of childbirth, and in each stage, the mother has a special role to play in experiencing the significant events that take place throughout her journey. The various stages can be roughly divided into three categories: the antenatal period, the intra-natal period, and the postnatal period. The postnatal period is when the mother and the newborn baby are most vulnerable.

The placenta separates from the uterine wall and is expelled when the baby is delivered. To shut any open blood vessels on the uterine wall around the placenta, the uterus immediately contracts. These uterine contractions, also known as pains in the uterus after pains, are a type of spasmodic pain that develops in the lower abdomen following delivery and lasts for two to four days.

Even though the postpartum ailments are minor, the postpartum mother may frequently find them upsetting and may not be able to fully appreciate the joy of motherhood. Each person's level of pain is different due to their own

pain thresholds. Pain is a subjective symptom. Nonetheless, the women can express or understand the full amount of her suffering, anxiety can result from pain, which might make the discomfort feel worse. Pain and childbirth are inextricably linked.[2]

The first day following delivery is when cramping will be most intense. If the womb kept firmly contracted, afterpains will be alleviated. When the bladder is full, the uterus cannot contract and instead tends to relax, making afterpains treatment impossible. The woman can rest prone with a pillow beneath her lower belly once her bladder is empty. The mother's uterus is constantly under pressure from the prone position, and the pillow adds additional pressure, keeping it constrained and eliminating postpartum pain because there is no uterine relaxation.

Many non-pharmacological pain management techniques exist and are crucial during the postnatal period. These include counterpressure, massage, breathing exercises, heat and cold packs, position modifications muscle relaxation techniques and abdominal exercises. When the after-pain is severe or lasts for more than a week the woman should immediately visit to the hospital and the nurse should strictly observe for the reason of the afterpain. It is the nurse's responsibility to relieve the pain successfully and make the postnatal period the happiest time of her life.[3]

These abdominal pains are caused by postpartum contractions of the uterus as it returns to its prepregnancy size and placement. To expel blood clots or afterbirth pieces, the uterus contracts hypertoneously. The uterus loses muscular tone with successive pregnancies as a result of its contraction-relaxation cycle, leading to after pains and severe pain in multiparous women.[4]

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Baby centre staff wrote an article on postpartum cramps. The total of 60 postnatal women, pre intervention level of after pains 5 (17%) mothers had moderate pain, 25 (83%) mothers had severe pain and none of them had no pain and mild pain, where as in post intervention 27 (90%) mothers had mild pain, 3 (10%) mothers had moderate pain, none of them had severe pain and no pain.[8]

The recent study on maternal mortality jointly carried out by the WHO and UNICEF is estimated that globally almost 95% of all maternal deaths occurred in low and lower middle-income countries in 2020. Every day in 2020, almost 800 women died from preventable causes related to pregnancy and childbirth. The major complications accounting for about 75% of all maternal deaths are: severe bleeding, infections after childbirth, complications after delivery etc.[9]

Objectives

Objectives of the study were to assess level of after pains among post-natal women at govt. Doon medical college and hospital Dehradun, Uttarakhand, to evaluate effectiveness of prone position on reduction of after pains among postnatal women in experimental group and control group, to find association between pre-test level of after pains among postnatal women with their selected demographic variables.

METHODS

Research approach and design

It was a Quasi experimental research approach in which non-equivalent control group pre-test-post-test design was used.

Setting of the study

The study was conducted in Govt. Doon medical college and hospital, Dehradun, Uttarakhand.

Study time

Duration of the study was 4 weeks (June to July 2023).

Target population

The target population of the study was primi postnatal women aged 18-35 admitted in govt. Doon medical college and hospital, Dehradun.

Accessible population

The accessible population of the study was postnatal women who were present at the time of data collection at govt. Doon medical college and hospital, Dehradun.

Sample

In the study sample were postnatal women who were admitted in govt. Doon medical college and hospital, Dehradun and fulfilled the inclusion criteria.

Sampling technique

Non probability purposive sampling technique is used to select the sample according to inclusion criteria in both experimental and control group. (35 in experimental and control group respectively).

Inclusion criteria

The inclusion criteria in the study comprised of primi postnatal women with normal vaginal delivery and who were admitted in postnatal wards of govt. Doon medical college and hospital, Dehradun, Uttarakhand, post-natal women having normal vaginal deliveries, post-natal women with or without episiotomy and post-natal women who were willing to participate.

Exclusion criteria

Exclusion criteria for the study participant were post-natal women with caesarean deliveries, post-natal women having comorbid conditions as post-partum haemorrhage, placental abnormalities and multigravida post-natal women.

Data collection tool

Tools used in the study consists of two sections-section I: Tool for socio demographic variable include 10 socio demographic variables that is age, BMI, religion, educational status, occupational status, nutritional pattern, type of Family, area of residence, previous knowledge regarding prone position, and source of information.

Section II-Numerical pain rating scale, this section gives information regarding the level of afterpains among post-natal women.

This standard tool has five components are no pain, mild pain, moderate pain and severe pain and the worst possible pain.

Ethical approval

Ethical permission was obtained from the concerned authorities in Govt. Doon medical college and hospital, Dehradun, Uttarakhand.

Data collection procedure

The study was conducted in govt. Doon medical college and hospital, Dehradun, Uttarakhand with administrative and ethical approval from concerned authorities in nursing college and hospital. After explaining the study and its objectives, the researcher asked each participant who met the inclusion criteria to sign a written consent form. To avoid bias, the first 30 participants were assigned to experimental group and remaining 30 were assigned to control group. In experimental group prone position after assessing the level of pain was given as intervention to those post-natal women who have undergone normal vaginal delivery. The woman was advised to empty her bladder before the intervention. Women were advised to lie in prone position along with a pillow placed below the abdomen for 3-5 minutes for 3 times at 30 minutes interval, 3 repetition each time for three days. At the day 3 pain was assessed by numerical pain rating scale.

Data analysis

Data was analysed according to stated objectives and to test hypothesis. Mean, frequency, percentage were calculated to describe the characteristics of samples. Paired t test and unpaired t test was used to find out the effectiveness of prone position on afterpains among postnatal women.

RESULTS

Table 1 suggests that in experimental group majority 16 (45.70%) women were in 18-23 years of age group and in control group majority 18 (51.42%) women were in age group of 24-29 years. With regards to BMI of postnatal women, in experimental group majority 19 (54.20%) and in control group 32 (91.42%) women had BMI between 18.5-24.9 respectively. Regarding their religion experimental group had majority 27 (77.14%) and in control group 28 (80%) women were Hindu. Educational status depicted that in experimental group 15 (42.85%) and in control group 16 (45.70%) women had secondary education. Occupational status showed that in experimental group majority 20 (57.14%) women were employed and in control group 21 (60%) women were home maker. Nutritional pattern indicated that in experimental group majority 14 (40%) and in control group 15 (42.85%) women were non vegetarian. Type of family showed that in experimental group 21 (60%) and in control group 25 (71.42%) women belongs to nuclear family. As per the area of residence the result revealed that in experimental group 23 (65.71%) women and in control group 18 (51.42%) women belongs to rural area. In experimental group 27 (77.14%) and in control group 30 (85.71%) had no previous knowledge regarding prone position. Source of information indicated that in experimental group majority 4 (11.42%) and in control group 3 (8.57%) women from social media had previous knowledge regarding prone position.

Table 1: Frequency and percentage distribution of socio-demographic variables of postnatal women in experimental and control group, (n=70).

Variables	Experimental group		Control group	
	F	%	F	%
Age (in years)				
18-23	16	45.70	17	48.47
24-29	16	45.70	18	51.42
30-35	3	8.57	-	-
BMI (kg/m^2)				
Less than 18.5	6	17.14	1	2.85
18.5-24.9	19	54.20	32	91.42
25-29.9	10	28.50	2	5.71
Religion				
Hindu	27	77.14	28	80
Muslim	6	17.14	6	17.41
Sikh	2	5.71	1	2.85
Christian	-	-	-	-
Educational status				
No formal education	-	-	1	2.85
Primary education	8	22.85	6	17.41
Secondary education	15	42.85	16	45.70
Graduate and above	12	34.28	12	34.28
Occupational status				
Home maker	15	42.85	21	60
Employed	20	57.14	14	40
Nutritional pattern				
Vegetarian	9	25.71	13	37.14
Non vegetarian	14	40	15	42.85
Eggetarian	12	34.28	7	20
Type of family				
Nuclear family	21	60	25	71.42
Joint family	13	37.14	10	28.50
Extended family	1	2.85	-	-
Area of residence				
Rural	21	34.28	18	51.42
Urban	23	65.71	17	48.57
Previous knowledge regarding prone position				
Yes	8	22.85	5	14.28
No	27	77.14	30	85.71
If yes then specify				
Family	4	11.42	3	8.57
Health worker	1	2.85	-	-
Friends	-	-	-	-
Social media	3	8.57	2	5.71

Table 2: Frequency and percentage distribution of score of level of pain of postnatal women in experimental and control group, (n=70).

Level of pain and score	Experimental group, (n=35)				Control group, (n=35)			
	Pre test		Post test		Pre test		Post test	
	F	%	F	%	F	%	F	%
No pain (0)	-	-	4	11.42	-	-	-	-
Mild pain (1-3)	1	2.85	17	48.57	-	-	4	11.42
Moderate pain (4-6)	14	40	13	37	20	57.14	27	77.14
Severe pain (7-9)	20	57.14	1	2.85	15	43	4	45.71
Worst possible pain (10)	-	-	-	-	-	-	-	-

Table 3: Pre-test and post test scores of afterpains in postnatal women in experimental group and control group, (n=70).

Area	Pre-test Mean±SD	Post-test Mean±SD	Mean difference	T value	P value
Experimental group, (n=35)	7.09±1.56	3.00±1.572	4.086	12.422	0.001
Control group, (n=35)	7.00±1.35	4.89±1.183	2.114	15.032	0.001

Table 4: Effectiveness of prone position on afterpains in postnatal women in experimental and control group (Unpaired 't' test), (n=70).

Test	Area	Mean±SD	Mean difference	T value	P value
Pre-test, (n=70)	Experimental group, (n=35)	7.09±1.56	0.086	0.246	0.806
	Control group, (n=35)	7±1.35			
Post test, (n=70)	Experimental group, (n=35)	3.00±1.572	1.886	5.672	0.00001

DISCUSSION

In experimental group majority (45.70%) in 18-23 years of age group and (45.70%) were in 24-29 years of age group. In control group majority (51.42%) of women were in age group of 24-29 years. In experimental group majority (42.85%) and in control group (45.70%) women had secondary education. In experimental group (77.14%) and in control group (80%) women were Hindu. Occupational status showed that in experimental group most (57.14%) of the women were employed and in control group majority (60%) women were home maker. In experimental group (60%) and in control group (71.42%) women belonged to nuclear family.

The findings supported by following study: Latha et al-A study to assess the effectiveness of prone position on afterpains among postnatal mothers at selected Hospital, Chennai.[1]

considering the age, (50%) women were in age group 26-30 years in study and control group respectively. Majority (70%) in experimental and (66.7%) of them had completed graduate and post graduate in control group. Considering the religion of postnatal mothers (46.7%) women were Hindu in experimental and control group respectively. Regarding the occupation of postnatal mothers, (76.7%) of them were unemployed in experimental group (73.3%) of them were unemployed in control group. Considering the family type of postnatal mothers in study group (66.7%) of them were in nuclear family and (63.3%) were in nuclear family.[10]

Effectiveness of prone position on reduction of afterpains among postnatal women in experimental and control group

The mean±SD score of level of pain in experimental group was 7.09±1.56 in pre-test and 3.00±1.572 in post-test, calculated t=12.422 which was higher than tabulated value of t=1.691 at 0.05 level of significance.

The mean and SD of level of pain was 3.00±1.572 in experimental group and 4.89±1.183 in control group. Calculated t=5.672 which was higher than tabulated t=1.668 at $p<0.05$ level of significance.

The findings of the study were supported by following study:

Saxena et al-A study to assess the effectiveness of Kegel exercise and prone position on afterpains and involution of uterus among postnatal mothers at selected hospital of Moradabad U.P.

According to this study the experimental group's mean score of post-tests was 3.70, which was below the post-test mean score of control group 5.70, statistical unpaired 't' test discovered that the afterpains average response was 4.85. it was extremely effective, as evidenced by the p=0.000.[11]

Association between pretest level of afterpains among postnatal women in selected demographic variables

The results revealed that the demographic variables age (χ^2=7.589, p=0.108), BMI (χ^2=1.109, p=0.893), religion (χ^2=6.542, p=0.162), educational status (χ^2=2.675, p=0.614), occupational status (χ^2=0.788, p=0.675), nutritional pattern (χ^2=3,422, p=0.487) type of family (χ^2=3.123, p=0.538), area of residence, (χ^2=1.014, p=0.602), previous knowledge regarding prone position (χ^2=0.648, p=0.723) and source of information was calculated by chi square test and it showed that there is no significant association of afterpains among postnatal women and selected demographic variables at the level of $p<0.05$.

The result was supported by findings of following study:

Dhirajlal et al in this study age (χ^2=0.76), religion (χ^2=0.37), educational status (χ^2=1.14), nutritional pattern (χ^2=0.85), area of residence, (χ^2=1.74). The results showed that there was no significant association of afterpains among postnatal women and selected demographic variables at the level of $p<0.05$.[12]

Study participants were limited to govt. Doon medical college and hospital, Dehradun. Generalization of the study were limited. Postnatal women with high-risk conditions were not taken for the study. Study was limited to primi postnatal women.

CONCLUSION

The study results concluded that prone position along with pillows was effective in reducing afterpains among postnatal women in experimental group and the rate of reduction of pain is slow in postnatal women in control group. Postnatal women were co-operative throughout the intervention and become familiar and found themselves comfortable as the level of pain reduced.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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