European Journal of Clinical Pharmacy
Print ISSN: 2385-409X **Online ISSN**: Applied
Website: https://farmclin.es/

Article

Effectiveness of Tailor made Intervention for Pregnancy Related Pelvic Girdle Pain and Functional Status among Antenatal Mothers at Selected Hospital, Puducherry

Article History:
Received: 12-06-2025
Accepted: 14-07-2025
Published: 12-08-2025

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How to cite this article:
Abirami. L, **Senthilnathan S,** *Jamunarani. G, Rajeswari. R,* **Gunasakthi G**, *Malliga. M, "A Descriptive Correlational Study to Assess the Relationship Between Pregnancy Related Pelvic Girdle Pain and Functional Status among Antenatal Mothers at Selected Hospital, Puducherry" European Journal of Clinical Pharmacy, vol. 7, no.1, 2025, 5833-5843.*

Abstract: Background of the study: Pain at the back of the pelvis is known as 'Pelvic Girdle Pain' (PGP). It is a common musculoskeletal disorder which affects the quality of life and causes considerable disabilities in daily activities. During the period of pregnancy, has important psychosocial implications, including extended leave from work during pregnancy, poorer quality of life (as a result of being unable to carry out normal roles, affecting their ability to care for their children) and also has a considerable social impact on the society since it is one of most common causes to quit jobs among pregnant women. Fear of development of this pain can be reason to avoid a new pregnancy and some women have stated that PGP was the beginning of a chronic condition. Hence their concerns have to be addressed adequately and measures to relieve these symptoms and discomforts have to be incorporated while providing comprehensive nursing care, thus enabling pregnant women to lead a fuller life.
Aim of the study: The main aim of this study is to assess the efficacy of a customized intervention for pelvic girdle pain and functional status in the study and control groups of expectant mothers.
Methodology: A quasi experimental (Non-randomized pre-test post-test with control group) research design was used to conduct this study. Antenatal mothers with pregnancy related pelvic girdle pain fulfilling the inclusion criteria were taken as a sample using non probability sampling technique. Sample size was 50 antenatal mothers (25 in study group and 25 in control group). Standardized numerical pain rating scale and modified functional status assessment scale were used to collect the needed data. Tailor made intervention was provided only for the study group and routine care and home remedies were followed by the control group. The statistical analyses were done by using the descriptive and inferential statistics.
Results: The result showed that, in post-test mean and SD scores of pregnancy related pelvic girdle pain between the study and control group were 3.52±1.44, 6.76±1.12 and the calculated 't' value was 8.829 at the 'p' level of <0.001. Regarding functional status, the post-test mean and SD scores between the study and control group were 34.36±4.46, 54.20+2.91 and the calculated 't' value was 18.612 at the 'p' level of <0.001. This clearly shows that, the tailor made intervention was very effective in reducing the level of pregnancy related pelvic girdle pain and improving the functional status among antenatal mothers. Conclusion: The result of this study concluded that the tailor made intervention helps in creating a positive outcome in reducing the level of pregnancy related pelvic girdle pain and improving the functional status among antenatal mothers.
Keywords: Tailor made intervention, pregnancy related pelvic girdle pain, functional status

INTRODUCTION

Every woman's pregnancy is a unique and priceless time, especially if it's her first time becoming pregnant. Pregnancy is a state in which a woman carries a fertilized egg inside the uterus. It is the period from conception to the birth of the baby. During the 40 weeks of pregnancy, from the day one till the end of delivery a woman faces various physiological and psychological changes, resulting in some sorts of ailment which may or may not require treatment. One among that is pelvic girdle pain.

Pelvic girdle pain (PGP) during pregnancy is a common complaint among women all over the world. Women who experience pelvic girdle pain in the present pregnancy continues to have in the puerperium period and are at risk of developing in also subsequent pregnancies. PGP has been frequently dismissed as trivial and inevitable although it significantly affects quality of life and causes considerable disabilities in daily activities such as walking, lifting, climbing stairs, lying flat on the back, turning in bed, housekeeping, exercising, working, hobbies during leisure time and sexual life.

The Clinical Practice Guidelines (2022) states that the prevalence of pelvic girdle pain is estimated to occur in 56% to 72% of the antepartum women, with 33% to 50% reporting severe symptoms before 20 weeks of gestation and 20% reporting it during 20 to 30 weeks of gestation and it may reach 60 to 70% in late pregnancy [1,2,3].

Worldwide, the prevalence of PPGP has been reported to range from 7% to 84% [4,5,6]. The study conducted by Hong Shanshan et.al (2023) reported that of the 1661 unique citations, 38 studies (21,533 pregnant participants) were included in this systematic review and meta-analysis. The overall pooled prevalence of LPP during pregnancy was 63% (95% CI: 0.57 to 0.69), with significant heterogeneity ($I^2 = 99.1\%$, $P < 0.001$). The prevalence differed by participants' continents, 71% (North America), 74% (South America), 63% (Asia), 64% (Europe), 59% (Africa) and 45% (Oceania). The prevalence differed by BMI, 64% (BMI <25), 64% ($25 \leq$ BMI ≤ 28), and 71% (BMI >28). The prevalence differed by age, 72% (age <25 years), 58% ($25 \leq$ age ≤ 30 years), and 69% (age >30 years). The prevalence were the same differed by study risk of bias, 63% (both low and moderate risk of bias studies). The prevalence was similar by gestational age, 62% (second trimester) and 63% (third trimester) [7]

In India, a cross sectional study in Maharashtra revealed that the prevalence of low back pain and pelvic girdle pain among 89 working women of the urban population between the age group of 25 - 40 years were 45.45% and 34.73% respectively - Manasi Nigave and Namrata Kadam (2023) [8].

In Puducherry report in about 202 consecutive pregnant mothers, 31/202 (15.35%) women were found to suffer from low back ache related to pregnancy, among them pregnancy related pelvic girdle pain was 1/31 (3.23%), pregnancy related low back pain was 17/31 (54.84%), combined pregnancy related low back pain and pelvic girdle pain were 13/31 (41.94%). In this study, the lumbo-pelvic pain was presented in 1/31, 9/31 and 19/31 on I, II and III trimesters respectively - Arunmozhimaran Vijayababu (2019) [9].

OBJECTIVES

- To assess the levels of pregnancy related pelvic girdle pain and functional status among antenatal mothers in study and control group.
- To evaluate the effectiveness of tailor made intervention for pregnancy related pelvic girdle pain and functional status among antenatal mothers in study and control group.

HYPOTHESES

H1: There is a significant difference in pre-test and post-test levels of pregnancy related pelvic girdle pain and functional status among antenatal mothers between the study and control group after implementation of tailor made intervention.

MATERIALS AND METHODS

Study Design

A Quasi experimental (Non randomized pre-test post-test with control group) research design was used in this study.

Study Population

The population of the study was antenatal mothers those who visited SVMCH & RC, Ariyur, Puducherry.

Sample Size

The total sample size of this study was 50 antenatal mothers, among them 25 samples were selected for study group and 25 samples were selected for control group.

Sampling Technique

Non probability, purposive sampling technique was adopted for this study.

SAMPLING CRITERIA

Inclusion Criteria

It includes antenatal mothers,

- who were 30 weeks of gestational age.
- who had pregnancy related pelvic girdle pain.
- who were available during the period of data collection.

Exclusion Criteria

It includes antenatal mothers,

- who had medical and obstetrical comorbid illness.
- who were receiving any pharmacological treatment for pregnancy related pelvic girdle pain.
- who were not willing for the study.

METHOD OF DATA COLLECTION

The data collection was started after obtaining permission from the Institutional Review Committee (IRC NO: ICON IRC-2021-2022-001). The data was collected over a period of four weeks from 17.07.2023 to 31.08.2023 at selected hospital, Puducherry. For the study, 50 antenatal mothers with pregnancy related pelvic girdle pain was selected by using purposive sampling technique. Among them, 25 samples were selected for study group and 25 samples were selected for control group. Participants were explained about the study and informed consent was obtained. Pre-test was conducted to both study and control group with standardized numerical pain rating scale to assess the level of pregnancy related pelvic girdle pain and modified functional status assessment scale to assess the functional status.[10] Tailor made intervention - a simple, planned, structured intervention that is repetitive for the purpose of conditioning the pelvic region. It includes the physical activities such as tailor sitting, trunk turns, pelvic tilts, diaphragmatic breathing technique. Each activity was demonstrated for 5 - 10 minutes and the total duration of the entire physical activities procedure was about 30 minutes. It was demonstrated during the antenatal visit to the study group. Followed by that, the participants were encouraged to practice the activities regularly at home everyday morning and evening sessions. Participants in the control group were followed routine care and home remedies. Post-test was conducted with standardized numerical pain rating scale and modified functional status assessment scale.

RESULTS

Table 1: Frequency and percentage distribution of demographic variables among antenatal mothers in study and control group (N = 50)

S. No.	Demographicvariables	Study Group		Control Group	
		Frequency (n)	Percentage %	Frequency (n)	Percentage %
1	**Age of the woman**				
	a) <20 years	2	8	3	12
	b) 21 – 25 years	5	20	**10**	**40**
	c) 26 – 30 years	**12**	**48**	**10**	**40**
	d) >30 years	6	24	2	8
2	**Educational status**				
	a) Non formal education	3	12	1	4
	b) Primary education	0	0	3	12
	c) High school education	3	12	4	16
	d) Graduates	**19**	**76**	**17**	**68**
3	**Occupation**				
	a) Homemaker	8	32	**9**	**36**
	b) Daily wages / Self employee	4	16	8	32
	d) Government employee	3	12	3	12
	e) Private employee	**10**	**40**	5	20
4	**Family income**				
	a) <Rs.10,000	3	12	6	24
	b) Rs.10,001 – 20,000	4	16	2	8
	c) Rs.20,001 – 30,000	4	16	3	12
	d) >Rs.30,000	**14**	**56**	**14**	**56**
5	**Type of the family**				

	a)Nuclear family	**21**	**84**	**19**	**76**
	b) Joint family	2	8	3	12
	c) Extended family	2	8	3	12
6	**Religion**				
	a) Hindu	**15**	**60**	**13**	**52**
	b) Christian	8	32	5	20
	c) Muslim	2	8	5	20
	d) Any other	0	0	2	8
7	**Dietary pattern**				
	a) Vegetarian	0	0	0	0
	b) Non-vegetarian	**25**	**100**	**25**	**100**
8	**Height in cms**				
	a) <150	2	8	2	8
	b) 151 – 160	**21**	**84**	**19**	**76**
	c) 161 – 170	2	8	4	16
	d) >170	0	0	0	0
9	**Weight in kgs**				
	a) <50	0	0	0	0
	b) 51 – 60	3	12	2	8
	c) 61 – 70	7	28	5	20
	d) >70	**15**	**60**	**18**	**72**
10	**Body Mass Index (BMI)**				
	a) <18.5	0	0	0	0
	b) 18.5 – 24.9	4	16	0	0
	c) 25 – 29.9	10	40	**16**	**64**
	d) ≥30	**11**	**44**	9	36

The above table shows that the frequency and percentage distribution of demographic variables in the study group, 12(48%) most of the antenatal mothers belong to 26 – 30 years of age. In respect to education, majority 19(76%) of them were graduates. About the occupation, 10(40%) of them were private employees. Regarding family income per month, majority 14(56%) of them earning>Rs.30,000. About the family status, highest 21(84%) were living in nuclear family, majority 15(60%) of them were Hindus, all 25(100%) of the samples preferred had non-vegetarian diet pattern. Regarding height, highest 21(84%) of the antenatal mothers belongs to 151-160cms. Majority 15(60%) of the samples fell under >70 kg. About BMI, 11(44%) of them were ≥30.

Similarly, in the control group, most 10(40%) of the samples were belongs to age group of 21 – 25 years and 26 – 30 years respectively. Among them, majority 17(68%) were graduates. Regarding occupation, 9(36%) of the antenatal mothers were homemakers. About family income per month, majority 14(56%) of the samples earning >Rs.30,000. Majority 19(76%) of them were living in nuclear family. Majority 13(56%) of the samples were Hindus. All of them 25(100%) were non-vegetarian. Majority 19(76%) of the antenatal mothers belongs to the height range of 151 – 160 cms. Regarding weight, 18(72%) of them were >70 kg and majority 16(64%) of the samples had BMI 25 – 29.9 (Table 1).

Table 2: Frequency and percentage distribution of clinical variables among antenatal mothers in study and control group (N = 50)

S. No.	Clinical variables	Study Group		Control Group	
		n	%	n	%
1	**Age at menarche**				
	a) <10 years	0	0	0	0
	b) 11 – 13 years	**22**	**88**	**22**	**88**
	c) 14 – 16 years	3	12	3	12
	d) >16 years	0	0	0	0
2	**The number of conception**				
	a) Primi gravidae	**19**	**76**	**18**	**72**
	b) Multi gravidae	6	24	7	28
3	**Gestational age**				
	a) <32 weeks	2	8	1	4
	b) 32 – 35 weeks	**12**	**48**	5	20
	c) 35 – 38 weeks	9	36	**14**	**56**
	d) >38 weeks	2	8	5	20
4	**Haemoglobin level**				
	a) <11 g/dl	2	8	5	20
	b) 11 – 13 g/dl	**14**	**56**	**15**	**60**
	c) 13 – 15 g/dl	7	28	4	16
	d) >15 g/dl	2	8	1	4
5	**Presentation of fetus**				
	a) Cephalic	**20**	**80**	**16**	**64**
	b) Breech	4	16	8	32
	c) Shoulder	1	4	1	4
	d) Brow	0	0	0	0

The above table show that the frequency and percentage distribution of clinical variables, in the study group, Majority 22(88%) of the antenatal mothers were belongs to the age group of 11 – 13 years at the time of menarche. Among them, 19(76%) were primi gravidae mothers. Regarding gestational age, 12(48%) of the samples were between 32 – 35 weeks. About haemoglobin level, 14(56%) of them had 11 – 13 g/dl. Among them, majority 20(80%) of the samples had cephalic presentation of fetus.

Similarly, in the control group, Majority 22(88%) of the samples were belongs to the age group of 11 – 13 years at the time of menarche. Among them, majority 18(72%) were primi gravidae mothers. Regarding gestational age, 14(56%) of the antenatal mothers were between 35 – 38 weeks. About haemoglobin level, 15(60%) of the samples had 11 – 13 g/dl. Majority 16(64%) of the antenatal mothers had cephalic presentation of fetus (Table 1).

Table 3: Frequency and percentage distribution of pre-test and post-test level of pregnancy related pelvic girdle pain among antenatal mothers in study and control group (N = 50)

Level of pregnancy related pelvic girdle pain	Study group (n = 25)				Control group (n = 25)			
	Pre-test		Post-test		Pre-test		Post-test	
	n	%	n	%	n	%	n	%
Mild pain	0	0	12	48	0	0	0	0
Moderate pain	8	32	**13**	**52**	12	48	**14**	**56**
Severe pain	**17**	**68**	0	0	**13**	**52**	11	44

The above table shows that the frequency and percentage distribution of pre-test and post-test level of pregnancy related pelvic girdle pain among antenatal mothers, in the study group, in pre-test level of pregnancy related pelvic girdle pain, majority 17(68%) of the antenatal mothers had experienced severe pain and 8(32%) of them had perceived moderate pain. Whereas in post- test, most 13(52%) of the samples perceived moderate pain and 12(48%) of the antenatal mothers experienced mild pain.

In the control group, in pre-test, majority 13(52%) of the samples perceived severe pain and 12(48%) of them experienced moderate pain. Whereas in post-test, majority 14(56%) of them had moderate pain and 11(44%) antenatal mothers perceived severe pain (Table 3).

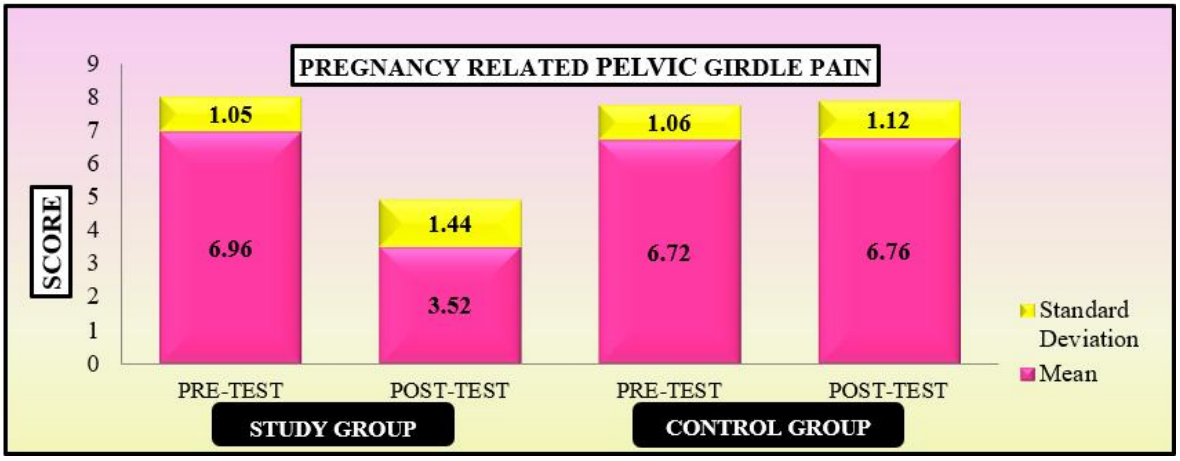
Table 4: Frequency and percentage distribution of pre-test and post-test level of functional status among antenatal mothers in study and control group (N = 50)

Level of functional status	Study Group (n = 25)				Control Group (n = 25)			
	Pre-test		Post-test		Pre-test		Post- test	
	n	%	n	%	n	%	n	%
Mild limited functional status	0	0	3	12	0	0	0	0
Moderately limited functional status	**15**	**60**	**22**	**88**	**17**	**68**	**17**	**68**
Severely limited functional status	10	40	0	0	8	32	8	32

The above table shows that, the percentage and frequency distribution of pre-test and post-test level of functional status among antenatal mothers, in the study group, in pre-test, majority 15(60%) of the samples had moderately limited functional status and 10(40%) of the antenatal mothers had experienced severely limited functional status. Whereas in post-test, majority 22(88%) of the antenatal mothers experienced moderately limited functional status, whereas only 3(12%) of them had mild limited functional status.

Similarly, in the control group, in pre-test most 17(68%) of the antenatal mothers had moderately limited functional status and only 8(32%) of them had experienced severely limited functional status. Whereas in post-test, the values remained same and no changes were found in the level of functional status (Table 4).

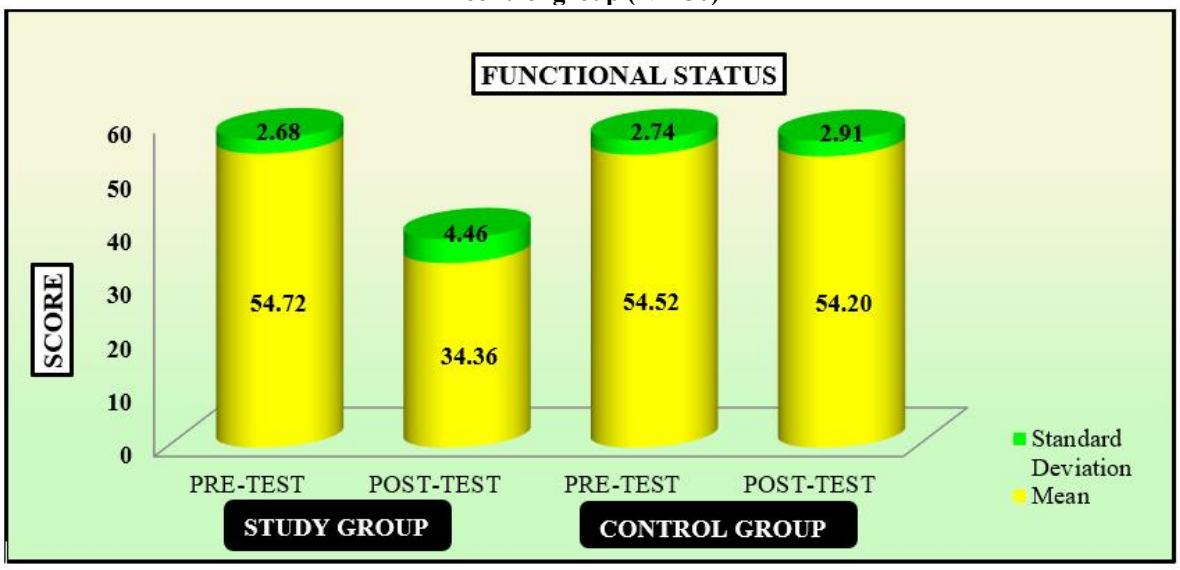
Figure 1: Comparison of pre-test and post-test scores of pregnancy related pelvic girdle pain among antenatal mothers in study and control group (N = 50)



In the study group, the mean and SD scores were 6.96±1.05 and 3.52±1.44, the mean difference score was 3.44 and the calculated 't' value was t = 15.879 at the 'p' level of p = 0.0001. This shows that there is a significant difference found in the level of pregnancy related pelvic girdle pain among antenatal mothers. It clearly depicts that, the tailor made intervention was very effective in reducing pregnancy related pelvic girdle pain among antenatal mothers. Hence the Hypothesis H1 was accepted.

Similarly, in the control group, the mean and SD scores were 6.72±1.06 and 6.76±1.12, the mean difference score was 0.04 and the calculated 't' value was t = 1.000 at the 'p' level of p = 0.0001. This shows that there is no significant difference found in the level of pregnancy related pelvic girdle pain among antenatal mothers (Figure 1).

Figure 2: Comparison of pre-test and post-test scores of functional status among antenatal mothers in study and control group (N = 50)



The comparison of pre-test, post-test level of functional status among antenatal mothers, in the study group, the mean and SD scores were 54.72±2.68 and 34.36±4.46, the mean difference score was 20.36 and the calculated 't' value was t = 19.475 at the 'p' level of p = 0.0001. This shows that there is a significant difference found in the level of functional status among antenatal mothers. It clearly depicts that, the tailor made intervention was very effective in improving the functional status among antenatal mothers. Hence the Hypothesis H1 was accepted.

Similarly, in the control group, the mean and SD scores were 54.52±2.74 and 54.20±2.91, the mean difference score was 0.32 and the calculated 't' value was t = 1.995 at the 'p' level of t = 0.001. This shows that there is no significant difference found in the level of functional status among antenatal mothers (Figure 2).

Table 5: Comparison of pre-test, post-test, mean, standard deviation and 't' test scores of pregnancy related pelvic girdle pain among antenatal mothers between the study and control group (N = 50)

Test	Group	Mean	S.D	Mean difference	't' value	'p' value
Pre-test	**Study Group**	6.96	1.05	0.24	0.800	0.428 (NS)
	Control Group	6.72	1.06			
Post-test	**Study Group**	3.52	1.44	3.24	**8.829**	**0.0001 S*** **
	Control Group	6.76	1.12			

S – Significant, (NS) – Non Significant

The above table shows that, the comparison of pre-test, post-test level of pregnancy related pelvic girdle pain among antenatal mothers between the study and control group. In pre-test, the mean and SD scores in the study and control group were 6.96+1.05 and 6.72+1.06, the mean difference score was 0.24 and the calculated 't' value was t = 0.800 at the 'p' level of p = 0.428, this shows that there is no significant difference found in pre-test level of pregnancy related pelvic girdle pain among antenatal mothers.

In post-test, the mean and SD scores in the study and control group were 3.52+1.44 and 6.76+1.12, the mean difference score was 3.24 and the calculated 't' value was t = 8.829 at the 'p' level of p = 0.0001, this shows that there is a significant difference found in the level of pregnancy related pelvic girdle pain among antenatal mothers in between the study and control group. It clearly depicts that, the tailor made intervention was very effective in reducing the pregnancy related pelvic girdle pain among antenatal mothers. Hence the hypothesis H1 was accepted (Table 5).

Table 6: Comparison of pre-test, post-test, mean, standard deviation and 't' test scores of functional status among antenatal mothers between the study and control group (N = 50)

Test	Group	Mean	S.D	Mean difference	't' value	'p' value
Pre-test	**Study Group**	54.72	2.68	0.20	0.261	0.795 (NS)
	Control Group	54.52	2.74			
Post-test	**Study Group**	34.36	4.46	19.84	**18.612**	**0.0001 S*** **
	Control Group	54.20	2.91			

S – Significant, (NS) – Non Significant

The above table shows that, the comparison of pre-test, post-test level of functional status among antenatal mothers between the study and control group. In pre-test, the mean and SD scores in the study and control group were 54.72+2.68 and 54.52+2.74, the mean difference score was 0.20 and the calculated 't' value was t = 0.261 at the 'p' level of p = 0.795, this shows that there is no significant difference found in pre-test level of functional status among antenatal mothers.

In post-test, the mean and SD scores in the study and control group were 34.36+4.46 and 54.20+2.91, the mean difference score was 19.84 and the calculated 't' value was t = 18.612 at the 'p' level of p = 0.0001, this shows that there is a significant difference found in the level of functional status among antenatal mothers in between the study and control group. It clearly depicts that, the tailor made intervention was very effective in improving the functional status among antenatal mothers. Hence the hypothesis H1 was accepted (Table 6).

DISCUSSION:

The first objective of the study was to assess the levels of pregnancy related pelvic girdle pain and functional status among antenatal mothers in study and control group

In this study the result indicated that, in the study group, in pre-test level of pregnancy related pelvic girdle pain, majority 17(68%) of the antenatal mothers had experienced severe pain and 8(32%) of them had perceived moderate pain. Whereas in post- test, most 13(52%) of the samples perceived moderate pain and 12(48%) of the antenatal mothers experienced mild pain. In the control group, in pre-test, majority 13(52%) of the samples perceived severe pain and

12(48%) of them experienced moderate pain. Whereas in post-test, majority 14(56%) of them had moderate pain and 11(44%) antenatal mothers perceived severe pain.

Regarding functional status among antenatal mothers, in the study group, in pre-test, majority 15(60%) of the samples had moderately limited functional status and 10(40%) of the antenatal mothers had experienced severely limited functional status. Whereas in post-test, majority 22(88%) of the antenatal mothers experienced moderately limited functional status, whereas only 3(12%) of them had mild limited functional status. Similarly, in the control group, in pre-test most 17(68%) of the antenatal mothers had moderately limited functional status and only 8(32%) of them had experienced severely limited functional status. Whereas in post-test, the values remained same and no changes were found in the level of functional status.

R Umar et.al., (2023) conducted a cross-sectional study on prevalence of pregnancy-related pelvic girdle pain and its association with activity limitations among pregnant women at various hospitals, Nigeria. A total of 400 samples were selected using purposive sampling technique. The data were collected using Pelvic Girdle Questionnaire and Numerical pain rating scale. Descriptive statistics and Independent T-test was used to compute differences in activity limitations between those with and without PPGP, and ANOVA was used to compute difference between PPGP and activity limitations across different trimesters. The data were analyzed using SPSS version 20, at Alpha level $p<0.05$. The result showed that, the mean (SD) score of the severity of the PPGP as measured with NPRS is 3.8 (1.7). There was a significant difference in the level of activity of those with PGP and those without PGP ($p=0.00$). There was no significant difference in activity limitation at different trimesters irrespective of pelvic girdle status, ($p=0.108$). There was no significant difference in activity limitation across parity, ($p=0.242$). It indicated that, Pregnant women with PGP were found to be more limited in activities than those without PGP [(11)].

The study was supported by a similar study conducted by Moges Gashaw et. al., (2022) a cross-sectional study on level of activity limitations and predictors in women with pregnancy-related pelvic girdle pain, India, the sample consists of 337 gravid mothers with pregnancy-related limbo-pelvic pain. Purposive sampling technique was used in this study. The data were collected by using structured questionnaire. The results shows among 324 pregnant women with pelvic girdle discomfort, 96 (29.6%) had limited activity, 185 (57.1%) had moderate activity limitation, and 43 (13.3%) had severe activity limitation. The study concluded that nearly one-third of the participants had a moderate to severe level of activity restriction, while more than half of the pregnant women with PPGP had a moderate to severe level [(12)].

The second objective of the study was to evaluate the effectiveness of tailor made intervention for pregnancy related pelvic girdle pain and functional status among antenatal mothers in study and control group.

According to the study's findings, the mean and SD scores for the study group's pre- and post-test levels of pregnancy related pelvic girdle pain were 6.96±1.05 and 3.52±1.44, the mean difference score was 3.44, and the computed 't' value was $t = 15.879$ at the 'p' level of $p = 0.0001$. This demonstrates that the degree of pelvic girdle pain associated with pregnancy varies significantly amongst expectant moms. It demonstrates unequivocally that the customized intervention was highly successful in lowering pelvic girdle pain associated with pregnancy in expectant moms. Thus, Hypothesis H1 was approved. At the 'p' level of $p = 0.0001$, the control group's mean and SD scores were 6.72±1.06 and 6.76±1.12, their mean difference score was 0.04 and their computed 't' value was $t = 1.000$. This demonstrates that there is no discernible variation in the degree of pelvic girdle pain associated with pregnancy across expectant women.

In the study group, the mean and SD scores for the functional status of prenatal women were 54.72±2.68 and 34.36±4.46, the mean difference score was 20.36, and the computed 't' value was $t = 19.475$ at the 'p' level of $p = 0.0001$. This demonstrates that there is a notable variation in the functional state of expectant moms. It demonstrates unequivocally that the customized intervention was highly successful in raising the functional status of expectant women. Thus, Hypothesis H1 was approved. The mean and SD scores for the control group were 54.52±2.74 and 54.20±2.91, respectively, and the estimated 't' value was $t = 1.995$ at the 'p' level of $t = 0.001$. The mean difference score was 0.32. This showed no significant difference in the level of functional status among antenatal mothers.

Antenatal mothers' levels of pelvic girdle discomfort before and during pregnancy were compared between the study and control groups. The study and control groups' pre-test mean and SD scores were 6.96+1.05 and 6.72+1.06, respectively. The mean difference score was 0.24, and the computed 't' value was $t = 0.800$ at the 'p' level of $p = 0.428$. These results indicate that there is no discernible difference in the pre-test level of pelvic girdle pain associated with pregnancy among expectant mothers. The study and control groups' post-test mean and SD scores were 3.52+1.44 and 6.76+1.12, respectively; the mean difference score was 3.24; and the computed 't' value was $t = 8.829$ at the 'p' level of $p = 0.0001$. This indicates that the study group and the control group experienced significantly different levels of pelvic girdle pain related to pregnancy. It makes it abundantly evident that the customized intervention was highly successful in lowering the pelvic girdle pain that expectant moms experienced throughout pregnancy. Thus, hypothesis H1 was approved.

The comparison of the study and control groups' pre- and post-test levels of functional status among expectant moms. The study and control groups' pre-test mean and SD scores were 54.72+2.68 and 54.52+2.74, respectively; the mean difference score was 0.20, and the computed 't' value was $t = 0.261$ at the 'p' level of $p = 0.795$. These results indicate that there is no discernible difference in the pre-test functional status of antenatal mothers. Likewise, in the post-test, the study and control groups' mean and SD scores were 34.36+4.46 and 54.20+2.91, respectively; the mean difference score was 19.84, and the computed 't' value was $t = 18.612$ at the 'p' level of $p = 0.0001$, indicating a significant difference.

This indicates that the research and control groups' levels of functional status among expectant moms differ significantly. It demonstrates unequivocally that the customized intervention was highly successful in raising the functional status of expectant women. Thus, hypothesis H1 was approved.

Thamizhselvi et al. (2023) conducted an experimental investigation on the effects of nurse-directed exercise on pelvic girdle pain and functional status among pregnant mothers in tertiary care hospitals, which provided support for the study. Using a straightforward random sampling technique, 108 pregnant women in all who visited the antenatal OPD at 27 weeks of gestation were chosen. Data was gathered using a pelvic girdle questionnaire and a numerical pain rating scale. In the results obtained, the Nurse directed exercises were more effective method in reducing the PGP level (4.26 vs 3.02) and improving the functional status (61.059 Vs 55.680) among antenatal mothers with PGP. There was a significant association between the PGP with nature of work (p-value-0.001) and previous history of abdominal or pelvic surgery (p-value 0.0102) [(13)].

Nasser Mohammad Rahimi et.al., (2022) assessed a systematic review and meta-analysis of randomized controlled trials of stabilizing exercises for lumbo-pelvic region impact in antenatal women with low back and pelvic pain. The sample consists of 623 participants. Random sampling technique was used in this study. The data were collected by using electronic database. The results shows that Stabilizing exercises significantly reduced discomfort (standard mean difference; SMD: 0.76, 95% CI: 1.26 to 0.27, p =.002) and disability (SMD: 1.19, 95% CI: 1.7 to 0.68, p =.001). The study concluded that the antenatal mothers were benefited from stabilising measures [(14)].

Augustina SJ et.al., (2020) done a comparative study on effects of three types of exercise programme for pelvic girdle pain during Pregnancy in Saveetha Physiotherapy and Rehabilitation Centre. Totally 45 individuals with pelvic girdle pain were selected based on the inclusion and exclusion criteria using convenience sampling technique. Then using lottery method of sampling subjects were allocated in three groups (group A – 15, group B – 15 and group C – 15). Researcher concluded that all the three groups resulted in positive outcomes but Group C with stabilizing exercise (Pelvic tilt and kegel's exercise) along with abdominal exercise is more effective than stabilizing exercise (Group A) and stabilizing exercise with back care (Group B) in reducing pain and disability among patients with pelvic girdle pain [(15)].

CONCLUSION:

The present study was aimed to assess the effectiveness of tailor made intervention for pregnancy related pelvic girdle pain and functional status among antenatal mothers at selected hospital in Puducherry concluded that the tailor made intervention helped in creating a positive outcome in reducing the level of pregnancy related pelvic girdle pain and improving the functional status among antenatal mothers.

IMPLICATION:

The findings of the study have practical application in the field of nursing. The implication of the study could be discussed in four areas namely: Nursing practice, Nursing administration, Nursing education and Nursing research.

Conflict of Interest

The authors have declared that no competing interests exist.

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