

## Nurse Directed Interventions in the Management of Pelvic Girdle Pain (PGP) in Pregnancy



### Medical Science

**KEYWORDS:** PGP, Pain, Disability, exercises, intervention, pregnancy

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#### Introduction

Pelvic girdle pain (PGP) during pregnancy is a common complaint for women all over the world irrespective of the socio-economy of the countries. 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, and working, during leisure, hobbies and sexual life. PGP increases with advancing pregnancy and in one of three women the pain gets severe. 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. The syndrome also has a considerable social impact because of the high cost for society since it is one of most common causes to quit jobs among pregnant women. Pregnancy is a time when enormous changes take place in a woman's body. These changes are necessary to support and nourish the fetus, prepare the women for childbirth and lactation. Pregnant women are usually unprepared for these changes, especially the ones which cause discomfort and hamper their day to day activities. They very often rely on nurses for accurate information and guidance. Hence their concerns have to be addressed adequately and measures to relieve these symptoms have to be incorporated while providing comprehensive nursing care, thus enabling pregnant women to lead a fuller life.

#### Statement of the problem

A study to evaluate the effectiveness of Nurse Directed Interventions in the management of Pelvic Girdle Pain (PGP) during pregnancy in selected hospitals of Kasaragod district, Kerala.

#### Objectives of the study

1. To assess the intensity of pain among pregnant women with Pelvic Girdle Pain before Nurse Directed Interventions (NDI).
2. To assess the disability among pregnant women with Pelvic Girdle Pain before Nurse Directed Interventions (NDI).
3. To Develop Nurse Directed Interventions ( NDI)
4. To evaluate the effectiveness of nurse directed interventions on intensity of pain among pregnant women with Pelvic Girdle Pain.
5. To evaluate the effectiveness of nurse directed interventions on disability among pregnant women with Pelvic Girdle Pain.
6. To correlate the pain scores with disability scores among pregnant women with Pelvic Girdle Pain.
7. To find the association of pain scores among pregnant women with Pelvic Girdle Pain with selected variables in the experimental and control group.
8. To find the association of disability scores among pregnant women with Pelvic Girdle Pain with selected variables in the experimental and control group.

(The selected variables include-age, education, income, occupation, years of married life, no of children, use of contraceptive pills and physical activity before pregnancy of pregnant women with PGP).

#### Hypothesis

All hypotheses will be tested at  $P < 0.05$  level of significance.

$H_1$ : There is a significant difference in the pain intensity between the pregnant women those who receive Nurse directed interventions and those who do not.

$H_2$ : There is a significant difference in the level of disability between the pregnant women who receive Nurse directed interventions and those who do not.

$H_3$ : There is a significant relationship between pain scores and disability scores among pregnant women with PGP.

$H_4$ : There is a significant association of intensity of pain with selected variables among pregnant women with PGP in the experimental and control group.

$H_5$ : There is a significant association of level of disability with selected variables among pregnant women with PGP in the experimental and control group.

#### Materials and Methods

**Design-** An evaluative approach was adopted. A Quasi experimental pre-test post-test control group design was selected for the study.

**Population- Population** - consists of antenatal women with PGP attending OPDs of selected hospitals of Kasaragod.

**Sample-** consists of antenatal women with PGP between 27<sup>th</sup> to 32<sup>th</sup> weeks of pregnancy attending OPDs of selected hospitals of Kasaragod.

**Sample Size-** consisted of 22 antenatal women with PGP (11in experimental and 11 in control group)

**Sampling technique- Selecting the hospital-** 4 hospitals with high antenatal population was selected conveniently.

**Selecting the sample-** judgmental sampling was used to select pregnant women with PGP those who meet the criteria. First 11 samples were assigned to experimental group and after finishing with data collection 11 samples were assigned to control group.

#### Delimitations

The study is delimited to:-

1. The antenatal women with PGP between 26<sup>th</sup> to 32<sup>nd</sup> week attending the OPDs of selected hospitals of Kasaragod who will reside in Kasaragod district until the end of data collection.
3. Pregnant women with PGP who can read and write English or Malayalam.
4. Pregnant women with PGP who undergo Nurse Directed interventions and perform exercises for 8 weeks continuously.

#### Tool- the tool consisted of

1. Sample Characteristic Proforma

2. Numerical Pain Rating Scale (NPRS)
3. Oswestry Back ache Disability Questionnaire

**Nurse Directed Intervention-** Includes 10 Stabilising exercises and a pamphlet on exercises and back care

**Ethical Consideration-** Ethical clearance was obtained from institutional review committee. A written Informed consent was obtained from the participants after verbally explaining all the aspects of the study.

## Methodology

**Research Design** – Quasi experimental design

## Review of Literature

Review of management of Women with pelvic girdle pain (PGP) revealed that they are treated with different therapies without firm evidence for the effectiveness. Two randomized controlled trials have investigated the effect of stabilizing exercises for PGP. The most recent study demonstrated significant positive results in favour of exercises (Stuge et al). The efficacy of a treatment program focusing on specific stabilizing exercises for pelvic girdle pain after pregnancy- A randomized controlled trial, the other did not (Mens et al). Diagonal trunk muscle exercises in peripartum pelvic pain: a randomized clinical trial.) Exercises that focused on only global muscles showed no effect. However, these exercises were not individualized and they were instructed by videotape. In the more recent study, the Exercises were supervised, corrected, individualized concerning choice of exercises, order and dosage, and pain was avoided. This comparison indicates that effective treatment of PGP may be achieved.

## Results

The data collected was analyzed using SPSS and is presented below under various sections

### Section-1 Demographic Characteristics

Highest percentage of subjects in the experimental group (72.7%) as well as in the control group (81.8%) was in the age group 21-30 years. Highest percentage of subjects in the experimental group (36.4%) had finished PUC whereas in control group (54.5%) had completed their high school education. Majority of the subjects in the experimental group and control group (63.6%) were Hindus. Highest percentage of subjects in experimental group (54.5%) and control group (45.5%) had a monthly income above Rs. 10000 /- High-est percentages of subjects in the experimental (36.4%) and control group (54.5%) were unemployed. Groups were also compared with respect to their demographic characteristics. Except for education status both the groups were comparable with regard to their demographic characteristics. Groups were also compared with respect to their obstetrical variables. Except for pain medication both the groups were comparable with regard to their maternal variables.

### Section-11 Description of pain level of Subjects with PGP

Majority of subjects 10(90.9%) in the experimental group and all the subjects 11(100%) in the control group had moderate pain on a 10 point Numerical Pain Rating Scale (NPRS).

The Mean±SD of pretest pain score in the experimental group was 6.67 ±0.674 and in control group it was 5.73 ±1.191.

Assessment of pain during different points of time shows that in experimental group the mean pain score and Standard deviation before intervention was 6.64±0.674. In post-test-1, post-test-2, post-test-3 and post-test-4 it was 6.27±0.647, 6.09±0.539, 5.91±0.539 and 6.0±0.775 respectively. In control group Mean and Stand-

ard deviation was 5.73±1.11, 5.55±0.820, 6±0.632, 6.45±0.82, 6.55±0.688 in pre-test, post-test-1, post-test-2, post-test-3, and post-test-4 respectively.

### Section-111 Description of degree of Disability in pregnant women with PGP

Majority of the subjects 10(90.9%) in the experimental group and all the subjects 11(100%) in the control group were crippled on Oswestry Disability questionnaire.

The Mean± SD of pretest disability scores in experimental group was 76.55 ±3.357, in control group it was 72.55 ±6.203. There was no significant difference in the mean disability scores of subjects in experimental and control group.

In experimental group Mean disability score and Standard deviation before intervention was 76.55±3.357. In Post-1, Post-2, Post-3 and Post-4 it was 77.45±4.569, 76.55±3.236, 71.82±4.423 and 76.00±4.472 respectively. In control group Mean and Standard deviation was 72.55±6.203, 72.91±6.472, 70.00±6.870, 70.18±7.346, 72.73±6.589 in Pre-test, Post-test-1, Post-test-2, Post-test-3, and Post-test-4 respectively.

### Section IV: Effectiveness of Nurse directed Interventions on the intensity of pain

There is a significant difference in pain scores among the pregnant women with PGP in the experimental group over a period of time Also there is a significant difference in pain scores among women in experimental group and control group (Table-2).. Two Factor Analysis of Variance for repeated measures shows that there is a significant change over different time points as  $F_{(df=4,80)} = 2.75$ ,  $P = 0.034 < 0.05$  and also change in pain level over different time point is significantly different between the experimental and control group as  $F_{(df=4,80)} = 5.284$ ,  $P = 0.001 < 0.05$ . So the hypothesis  $H_1$  is accepted that there is a significant difference in the pain intensity between the pregnant women those who receive Nurse directed interventions and those who do not.

**Table-2 Two Factor ANOVA to compare the effectiveness of intervention over different time point among two groups on pain**

Source	F value	df	P value	inference
Comparing pain over different time point	2.745	4, 80	.034	Sig
Comparing pain between the group over different time	5.284	4, 80	.001	Sig

Further post hoc analysis was performed within the group and between the groups by Bonferonis test.(Table-3) In experimental group there was a reduction of 5.48% in the pain scores in Post -1, 8.22% in Post -2, 10.96 % in Post -3 and 9.59% in Post- 4 compared to Pre-test. The change in Post-3 and Post- 4 is significant as the P value is less than 0.05 .Whereas in the control group there is a decrease in pain score by 3.17 % in post-1, 4.76% increase in Post-2, 12.1% increase in Post-3 and a 14.29% increase in Post-4. The amount of increase in control group is not statistically significant.

**Table-3 Pair wise comparison within group for pain among subjects in experimental and control group by Post Hoc Test**

	Observations		Mean dif- f- fce	Std error	Change	P value	infer- ence	
Exp	pretest	Post-1	.364	.279	5.48	1.000		
		Post-2	.545	.247	8.22	.519		
		Post-3	.727	.273	10.96	.040	Sig	
		Post-4	.636	.338	9.59	.044		
	Post-1	Post-1	.182	.122	2.90	1.000		
		Post-2	.364	.244	5.80	1.000		
		Post-3	.273	.237	4.35	1.000		
	Post-2	Post-3	.182	.182	2.99	1.000		
		Post-4	.091	.211	1.49	1.000		
	Post-3	Post-4	-.091	.211	-1.54	1.000		
	control	pretest	Post-1	.182	.519	3.17	1.000	NS
			Post-2	-.273	.488	-4.76	1.000	
Post-3			-.727	.384	-12.70	.872		
Post-4			-.818	.444	-14.29	.948		
Post-1		Post-1	-.455	.207	-8.20	.531		
		Post-2	-.909	.315	-16.39	.162		
		Post-3	-1.00	.234	-18.03	.016		
Post-2		Post-3	-.455	.247	-7.58	.959		
		Post-4	-.545	.157	-9.09	.041		
Post-3		Post-4	-.091	.251	-1.41	1.000		

Further Pair wise comparison of pain in subjects between the Experimental and control groups was done. the amount of the change in pain scores is significant in Post-3 and Post-4 between the experimental group and the control group. It shows that the pain is significantly reduced in the experimental group compared to the control group, after Post-3 and Post-4 (end of 6<sup>th</sup> and 8<sup>th</sup> week).

**Section V: Effectiveness of Nurse directed Interventions on Disability**

Two Factor Analysis of Variance for repeated measures (Table -4) shows that there is a significant change in disability over different time points as  $F_{(4, 80)} = 8.528, P = 0.001 < 0.05$  and also change in pain level or different time point is significantly different between the experimental and control group as  $F_{(4, 80)} = 2.540, P = 0.046 < 0.05$ . So the hypothesis  $H_2$  is accepted that there is a significant difference in the disability scores between the pregnant women those who receive Nurse directed interventions and those who do not.

**Table-4 Two Factor Analysis of Variance for repeated measures for Disability**

Source	F Value	df	p value	Inference
Comparing pain over different time point	8.528	4, 80	.001	Sig
Comparing pain between the group over different time	2.540	4, 80	.046	Sig

Two Factor Analysis of Variance for repeated measures shows that there is a significant change in disability over different time points as  $F_{(4, 80)} = 8.528, P = 0.001 < 0.05$  and also change in pain level or different time point is significantly different between the experimental and control group as  $F_{(4, 80)} = 2.540, P = 0.046 < 0.05$ . So the hypothesis  $H_2$  is accepted that there is a significant difference in the disability scores between the pregnant women those who receive Nurse directed interventions and those who do not.

Pair wise comparison for disability within experiment and control group was done by the Post hoc analysis performed within the group and between the groups. In experimental group there was 1.19% increase in disability scores in post -1, whereas disability score reduced to pre- test level in Post-2. Thereafter there was a 6.18% decrease in Post-3, 0.71% decrease in Post-4 disability scores compared to pre- test. The change in Post- 3 is significant as the P value is less than 0.05. Whereas in the control group there was a 0.50% increase in disability score in Post-1 , 3.51% increase in Post-2, 3.26% increase in P3, 0.25 % increase in Post-4. The amount of increase in control group is not statistically significant.

Pairwise comparison between the experimental and control group shows that the amount of the change in disability scores is significant in Post- 3 between the experimental group and the control group. It shows that the intervention is more effective in reducing the disability significantly in the experimental group compared to the control group after Post-3 (end of 6<sup>th</sup> weeks).

**Section-VI- Correlation between Pain and disability**

There was no statistically significant correlation between Pre-test pain and disability scores. So, the researcher accepts the null hypothesis ( $H_0$ ) that there is no significant correlation between the Pain scores and disability Scores in the experiment and control group.

**Section VII: Association of Pain with Demographic variables**

Fisher exact test was used to find out the association of pain with selected variables such as age, income, occupation, number of children, use of contraceptive pills and physical activity. There was no significant association of the pre-test pain level in the experiment and control group with the selected variables except for religion.

**Section VIII: Association of disability with Demographic variables**

There was no significant association of the pre-test disability level in the experiment and control group with the selected variables except for occupation.

**Discussion**

In the present study majority of the subjects had moderate pain on NPRS and were crippled as per their scores on Oswestry disability questionnaire. The findings correspond with the study conducted by Kluge J, Hall D, Louw Q et al (2011). The pain scores of subjects in the experimental group significantly reduced in Post-3 and Post-4(end of 6<sup>th</sup> and 8<sup>th</sup> week); whereas in control group there was no significant change in pain scores. The findings are in accordance with the study conducted by Eggen M H, Stuge B et al (2012) which supports the evidence that NDI reduces the pain in PGP. The intervention is more effective in reducing the disability significantly in the experimental group compared to the control group after Post-3 (end of 6<sup>th</sup> wk). This study resembles the findings of Depledge J, McNair (2004).

The study findings reveal that Nurse Directed Intervention is effective in reducing pain and disability of women with PGP in pregnancy. Hence more studies have to be conducted in this area with more sample size.

**Conclusion**

Pain and functional difficulties resulting from Pelvic Girdle Pain can be reduced if the condition is diagnosed early and the pregnant woman is given accurate information and managed appropriately. Nurse midwives play an important role in providing advices on back care and teaching them exercises which will enable pregnant women with PGP to alleviate their sufferings lead a productive life

**REFERENCE**

1. Stuge B, Mørkved S, Holm I, Völlestad N, To treat or not to treat post partum pelvic girdle pain with stabilizing exercises? *Man Ther*,2011; 11:287–296 |
2. Fredriksen EH."Listen to your body". A qualitative text analysis of Internet discussions related to pregnancyhealth and Pelvic Girdle Pain *Patient Educ Couns* - 2008; 73(2): 294-9 |
3. Depledge J, McNair, SmithC, Williams M, Management of Symphysis Pubis Dysfunction During Pregnancy Using Exercise and Pelvic Support Belts, *Physical Therapy*,2006: 26(8) 2004. |
4. Adler CL, Zarchin YR, *J Obstet Gynecol Neonatal Nurs*. 2002 Jul-Aug;31(4):418-27. | The "virtual focus group": using the Internet to reach pregnant women on home bed rest. |
5. Eggen MH, Stuge B, Mowinckel P, Jensen KSHagen KB .Can Supervised Group Exercises Including Ergonomic Advice Reduce the Prevalence and Severity of Low Back Pain and Pelvic Girdle Pain in Pregnancy? A Randomized Controlled Trial.*Phys Therapy* 2012 Jan 26. |
6. Kluge J, Hall D, et al. J Specific excercises to treat pregnancy related backache in South African population. *Gynecol Obstet*.2011 Jun;113(3):187- |
7. Eggen M H, Stuge B et al, Jensen KSHagen KB .Can Supervised Group Exercises Including Ergonomic Advice Reduce the Prevalence and Severity of Low Back Pain and Pelvic Girdle Pain in Pregnancy? A Randomized Controlled Trial. 2012 Jan 26. |