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Article

Effectiveness of Nursing care intervention package on reduction of low back pain among at selected villages, Puducherry

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Abstract: Background: Low back pain is the 5th most common reason for the physician visit affect nearly 60 to 80% of the people throughout their lifetime. Low back pain can have deliberating effects on physical, psychological and social well- being resulting in functional impairment and a lower quality of life.

Aim of the study: The main aim of the study is to assess the effectiveness of Nursing care intervention package on reduction of low back pain among women at selected villages, Puducherry.

Materials and Methods: The design adopted for the study was a true experimental Randomized Pre-test and Post-test with Control group design. Sixty samples were selected from which 30 samples were in study group and 30 samples were in control group at SVMCH adopted villages - Ariyur, Pangoor. The data collection was done with a Modified numerical pain rating scale. Study group received selected Nursing intervention package for 7 days. The post-test was conducted after 7 days of intervention for the study group and control group. The collected data were analysed based on the above-mentioned objectives using descriptive and inferential statistics.

Result: In the present study, the pre-test mean score of pain in the study group was 6.90±1.12 and post-test mean score was 3.56±0.93. The mean difference score was 3.34. The calculated student paired 't' test value of t=25.673 was statistically significant at p<0.001 level. This clearly shows that Nursing Care intervention package on reduction of low back pain administered to the women in the study group was found to be effective in reducing the level of pain in the post test. In this study, pre-test mean score of pain in the control group was 7.06±0.73 and post-test mean score was 6.93±0.86. The mean difference score was 0.13. The calculated student paired 't' test value of t=1.43.9 was not statistically significant at p<0.05 level. This clearly shows that there was statistically significant difference between the pre-test and post-test level of low back pain among women in the control group who had undergone normal daily routines.

Conclusion: According to the study, the study group's post-test score significantly decreased in comparison to the control group. Therefore, it can be said that the Nursing care intervention package aids in lowering women's levels of low back pain.

Keywords: Nursing care intervention package, effectiveness, low back pain, women.

INTRODUCTION

Low back pain is a common clinical and socio-economic problem and it is unpredictable pattern. Many people will experience an episode of low back pain during their life. Acute low back pain is frequently disappearing within one or two weeks but sometime acute low back pain persists more than 12 weeks become chronic and difficult to treat completely. It must be ruled out through history collection, physical examination. When the type of low back pain is known appropriate intervention may bring improvement in symptoms or return to normal function.

According to WHO (2020), low back pain affected 619 million people globally. Low back pain can be experienced at any age, and most people experience low back pain at least once in their life. Prevalence increases with age up to 80 years, while the highest number for low back pain cases occurs at the age of 50-55 years. Low back pain is more prevalent in women. Non-specific low back pain is the most common presentation of low back pain about 90% of cases.[1]

According to Bang et al., (2021), Lower back pain (LBP) constitutes a significant health burden among Indian women, with prevalence rates surpassing those seen in men. Current research indicates that approximately 79% of Indian women aged between 20 to 50 years' experience some form of chronic pain, with LBP alone affects around 80% of women compared to 59% of men.[2]

According to Logaraj Muthunarayana (2020), In Tamil Nadu, women between age group of 40-49 years reported higher prevalence of low back pain (10%).[3]

Gautam M Shetty et al., (2022**)** conducted a study on prevalence of low back pain in India, A systematic review and meta-analysis to determine the comprehensive epidemiological point, annual and lifetime prevalence of low back pain among Indian subjects and researcher found that the point 48%, annual 51% and lifetime prevalence rates 66% of low back pain in the Indian population is higher compared to global and other ethnic populations affecting a large proportion of the population, especially among women, rural population and in elementary works.[4]

Antonija Hrkac et al., (2022) has done a comparison of supervised exercise therapy with or without biopsychosocial approach for nonspecific low back pain-Randomized controlled trail. A biopsychosocial rehabilitation is recommended for nonspecific low back pain. However, its effectiveness compared to the traditional supervised exercise therapy of nonspecific low back pain treatment. This study suggests that graded activity and group-based supervised exercise therapy have beneficial effects over the control group in the treatment of nonspecific low back pain.[5]

The prevalence of low back pain among women is in the increasing state. Many reviews, suggest that it is important to assess the level of low back pain and provide adequate intervention for the low back pain. Hence the investigator is interested in conducting the research on the specific Nursing care intervention package to reduce the level of low back pain.

OBJECTIVES

- To assess the pre-test and post-test level of low back pain among women.
- To evaluate the effectiveness of Nursing care intervention package on reduction of low back pain among women.
- To find out association between the pre-test level of low back pain among women with the selected demographic variables.
- To find out association between the pre-test level of low back pain among women with the selected clinical variables.

HYPOTHESIS

- **H1:** There is a significant difference between pre-test and post-test level of low back pain among women after administration of selected Nursing care intervention package in the study and control group.
- **H2:** There is a significant association between the pre-test level of low back pain among women with the selected demographic variables in the study and control group.
- **H3:** There is a significant association between the pre-test level of low back pain women with the selected clinical variables in the study and control group.

MATERIALS AND METHODS

STUDY DESIGN

The research design adopted for the study was true experimental pre-test and post-test research design was used in this study.

STUDY POPULATION

The population of the present study was women with low back pain in the age group of 40 to 60 years who are residing in adopted villages of SVMCH&RC, Ariyur and Pangur, Puducherry.

SAMPLE SIZE

The sample size was 60. In that 30 sample for the study group and 30 sample for the control group.

SAMPLING TECHNIQUE

A probability, simple random sampling technique with lottery method was used to select the sample.

SAMPLING CRITERIA

INCLUSION CRITERIA

- Women in the age group of 40 to 60 years.
- Women with low back pain.
- Women who were willing to participate in the study.
- Women who were available at the time of data collection period.

EXCLUSION CRITERIA

- Women who are critically ill.
- Women who cannot understand both English and Tamil language.
- Women who had undergone spinal surgery.

METHOD OF DATA COLLECTION

The data collection was started after obtaining permission from the Institutional Review Committee (IRC NO: ICON IRC-2021-2022-005). The data was collected over a period of four weeks from 17.07.2023 to 31.08.2023 at selected villages, Puducherry. The investigator gave self-introduction and explanation about the study protocol to the samples. After this, informed consent was obtained from all the samples. The design adopted for the study was a true experimental Randomized Pre-test and Post-test Control group design to assess the effectiveness of selected Nursing care intervention package on reduction of low back pain among women there was used to select 60 samples. 30 samples were in study group and 30 samples were in control group at SVMCH adopted villages - Ariyur and Pangur, Puducherry. Pre-test was done with a Modified numerical pain rating scale. Study group received selected nursing intervention for 7 days. The post-test was conducted after 7 days of intervention for the study group and control group. The collected data were analyzed based on the above mentioned objectives using descriptive and inferential statistics.

RESULT & ANALYSIS

Table 1: Frequency and percentage distribution of demographic variables of women in study and control group.

(N= 60)

Demographic Variables	Study group		Control Group	
	(n)	(%)	(n)	(%)
1. Age (in years)				
41 – 45years	6	20.0	3	10.0
46 – 50years	**15**	**50.0**	**12**	**40.0**
51 – 55years	6	20.0	8	26.7
56 – 60years	3	10.0	7	23.3
2. Marital status				
Unmarried	0	00.0	0	00.0
Married	**24**	**80.0**	**19**	**63.3**
Divorced	3	10.0	1	3.3
Widow/Widower	3	10.0	10	33.4
3. Religion				
Hindu	**30**	**100.0**	**25**	**83.3**
Christian	0	00.0	1	3.3
Muslim	0	00.0	4	13.4
Others	0	00.0	0	00.0

4. Educational status				
Non-formal education	0	00.0	0	00.0
Primary education	11	36.7	10	33.3
Secondary education	**13**	**43.3**	**17**	**56.7**
Graduate/ Postgraduate	6	20.0	3	10.0
5. Occupational status				
Self – employment	0	00.0	0	00.0
Private employee	14	46.7	9	30.0
Government employee	0	00.0	0	00.0
Unemployed	**16**	**53.3**	**21**	**70.0**
6. Nature of job				
Sedentary worker	**17**	**56.7**	**16**	**53.3**
Skill worker	9	30.0	14	46.7
Technical worker	0	00.0	0	00.0
Others	4	13.3	0	00.0
7. Income per month				
Rs.Below 15,000	**18**	**60.0**	**24**	**80.0**
Rs.15,000 – 25,000	12	40.0	6	20.0
Rs.25,000 – 35,000	0	00.0	0	00.0
Rs.Above 35,000	0	00.0	0	00.0
8. Dietary pattern				
Vegetarian	8	26.7	5	16.7
Non-vegetarian / Mixed diet	**22**	**73.3**	**25**	**83.3**
9. Specific unhealthy habits				
Smoking	0	00.0	0	00.0
Alcoholism	0	00.0	0	00.0
Tobacco chewing	2	6.7	7	23.3
None of the above	**28**	**93.3**	**23**	**76.7**
All of the above	0	00.0	0	00.0
10. Number of children				
One	0	00.0	0	00.0
Two	**20**	**66.7**	**24**	**80.0**
More than two	10	33.3	6	20.0
Nil	0	00.0	0	00.0
11. Mode of delivery				
Spontaneous vaginal delivery	**28**	**93.3**	**23**	**76.7**
Cesarean section	2	6.7	7	23.3
Others	0	00.0	0	00.0
Nil	0	00.0	0	00.0

The above table shows the frequency and percentage distribution of demographic variables most of the women, 15(50%) in the study group and 12(40%) in the control group were aged between 46 – 50 years. Regarding marital status 24(80%) in the study group and 19(63.3%) in the control group were married. Recording religion, 30(100%) in the study group and 25(83.3%) in the control group were Hindus. When considering educational status, 13(43.3%) in the study group and 17(56.7%) in the control group had secondary education. Recording employment status, 16(53.3%) in the study group and 21(70%) in the control group were unemployed. When considering nature of job, 17(56.7%) in the study group and 16(53.3%) in the control group were sedentary workers. Recording income per month, 18(60%) in the study group and 24(80%) in the control group had an income of, 28(93.3%) in the experimental and 23(76%) in the control group were none of the specified below 15,000 per month. When considering dietary pattern 22(73.3%) in the study group and

25(83.3%) in the control group were non-vegetarian/mixed diet. Recording unhealthy habits, 28(93.3%) in the study group and 23(76.7%) in the control group were none of the specified unhealthy habits. Regarding the information about number of children, 20(66.7%) in the study group and 24(80%) in the control group had two children. In consideration mode of delivery, 28(93.3%) in the experimental group and 23(76.7%) in the control group had undergone spontaneous vaginal delivery.

Table 2: Frequency and percentage distribution of clinical variables of women in study and control group.

(N= 60)

Clinical Variables	Study Group		Control Group	
	(n)	(%)	(n)	(%)
Duration of low back pain				
Less than 1 month	0	00.0	0	00.0
1-6 months	9	30.0	7	23.3
6-1 year	**14**	**46.7**	**20**	**66.7**
More than 1 year	7	23.3	3	10.0
2. How long did you experience low back pain in a day?				
Less than 10 minutes	0	00.0	0	00.0
10-20 minutes	**18**	**60.0**	**16**	**53.3**
20-30 minutes	12	40.0	14	46.7
More than 30 minutes	0	00.0	0	00.0
3. History of hospitalization due to low back pain from the past one year?				
Not admitted	**29**	**96.7**	**25**	**83.3**
1 – 2 times	1	3.3	5	16.7
3 – 4 times	0	00.0	0	00.0
Above 4 times	0	00.0	0	00.0
4. Are you taking any medication and treatment for low back pain?				
Yes	4	13.3	9	30.0
No	**26**	**86.7**	**21**	**70.0**
5. Are you experiencing low back pain while doing the daily routine activities?				
Yes	**30**	**100**	**30**	**100**
No	0	00.0	0	00.0
6. Whether the low back pain disturbs your sleep pattern during night time?				
Yes	**26**	**86.7**	**28**	**93.3**
No	4	13.3	2	6.7
7. Did you follow any specific diet pattern for relieving low back pain?				
Yes	0	00.0	0	00.0
No	**30**	**100**	**30**	**100**
8. Did you follow any regular exercise for reducing low back pain?				
Yes	0	00.0	3	10.0
No	**30**	**100**	**27**	**90.0**
9. Did you have any history of trauma or any accidents?				
Yes	0	00.0	3	10.0
No	**30**	**100**	**27**	**90.0**
10. Mention activities that induce slow back pain				
Lifting weight	**19**	**63.3**	**19**	**63.3**
Climbing upstairs	11	36.7	11	36.7
Prolonged standing	0	00.0	0	00.0

Others	0	00.0	0	00.0
11. Basal metabolic index				
<18.5	0	00.0	0	00.0
18.5 – 24.9	**16**	**53.3**	**17**	**56.7**
25.0 – 29.9	14	46.7	13	43.3
>30	0	00.0	00	00.0

According to the above table, the majority of the women—14 (46.7%) in the study group and 20 (66.7%) in the control group—had low back pain for one to six months; 18 (60%), and 16 (83.3%) in the study group and the control group, had experienced low back pain for 10 to 20 minutes each day; 29 (96.7%) and 25 (83.3%) in the study group and the control group had not been hospitalized for low back pain in the previous year; 26 (86.7%) in the study group and 21 (70%) in the control group had not taken any medication or treatment for the condition; 30 (100%) in both groups had experienced low back pain while performing daily routine activities; 26 (86.7%) in the study group and 28(93.3%) in the control group had the disturbance in their sleep pattern during night time due to the low back pain, 30(100%) in both the group any specific diet pattern was not followed for relieving low back pain, 30(100%) in the study group and 27(90%) in the control group regular exercise was not followed for reducing low back pain and had no history of trauma or any accidents, 19(63.3%) in both the groups had been induced low back pain while lifting weight and 16(53.3%) in the study group and 17(56.7%) in the control group had basal metabolic rate of between 18.5 – 24.9.

Table 3: Frequency and percentage distribution of pre-test of level of low back pain among women in study and control group.

(N = 60)

Low Back Pain Level	**Study Group**		**Control Group**	
	Frequency (n)	**Percentage (%)**	**Frequency (n)**	**Percentage (%)**
Mild pain (1 – 3)	0	00.0	0	00.0
Moderate pain (4 – 6)	8	26.7	6	20.0
Severe pain (7 – 10)	22	73.3	24	80.0

The above table shows that in the pre-test of study group, 17(68%) had severe pain and 8(32%) had moderate pain. In the control group, 13(52%) had severe pain and 12(48%) had moderate pain in the pre-test.

Table 4: Frequency and percentage distribution of post-test level of low back pain among women in study and control group.

(N = 60)

Low Back Pain Level	**Study Group**		**Control Group**	
	Frequency (n)	**Percentage (%)**	**Frequency (n)**	**Percentage (%)**
Mild pain (1 – 3)	14	46.7	0	00.0
Moderate pain (4 – 6)	16	53.3	13	43.7
Severe pain (7 – 10)	0	00.0	17	56.3

The table shows that after the intervention in the post test of study group, 16(53.3%) had moderate pain and 14(46.7%) had mild pain. In the control group, 13(43.7%) had moderate pain and 17(56.3%) had severe pain in the post test.

Table 5: Effectiveness of Nursing care intervention package on reduction of low back pain among women in study and control group.

(N = 60)

GROUP	TEST	MEAN	STANDARD DEVIATION	't' VALUE	'p' VALUE
STUDY GROUP	**Pre-Test**	6.90	1.12	25.673	**0.0001 S*** **
	Post-Test	3.56	3.34		
CONTROL GROUP	**Pre-Test**	7.06	0.73	1.439	0.161(NS)
	Post-Test	6.93	0.86		

***p<0.001 S- Significant, NS- Not significant

The above table depicts that the pre-test mean score of pain in the study group was 6.90±1.12 and post-test mean score was 3.56±0.93. The mean difference score was 3.34. The calculated student paired 't' test value of t=25.673 was statistically significant at p<0.001 level. This clearly shows that Nursing Care intervention package on reduction of low back pain administered to the women in the study group was found to be effective in reducing the level of pain in the post test.

The above table depicts that the pre-test mean score of pain in the control group was 7.06±0.73 and post-test mean score was 6.93±0.86. The mean difference score was 0.13. The calculated student paired 't' test value of t=1.43.9 was not statistically significant at p<0.05 level. This clearly shows that there was statistically significant difference between the pre-test and post-test level of low back pain among women in the control group who had undergone normal daily routines

Table 6: Association of pre-test of level of low back pain among women with their selected demographic variables.

(N = 60)

Demographic Variables	Pre-test level of low back pain				Chi-Square & p-value
	Moderate		Severe		
	(n)	(%)	(n)	(%)	
Age (in years)					χ^2=4.924 d.f=3 p=0.177 NS
41 – 45years	0	0	7	15.2	
46 – 50years	4	28.6	20	43.5	
51 – 55years	6	42.8	10	21.7	
56 – 60years	4	28.6	9	19.6	
Marital status					χ^2=2.301 d.f=2 p=0.316 NS
Unmarried	0	0	0	0	
Married	7	50	31	67.4	
Divorced	2	14.3	2	4.3	
Widow/Widower	5	35.7	13	28.3	
Religion					χ^2=2.029 d.f=2 p=0.363 (NS)
Hindu	14	100	40	87	
Christian	0	0	1	2.2	
Muslim	0	0	5	10.8	
Others	0	0	0	0	
Educational status					χ^2=8.552 d.f=2 **p=0.014* S**
Non-formal education	0	0	0	0	
Primary education	2	14.3	19	41.3	
Secondaryeducation	8	57.1	25	54.3	
Graduate/PG	4	28.6	2	4.3	
Occupational status					χ^2=1.051 d.f=1
Self employment	0	0	0	0	

Private employee	7	50	16	34.8	p=0.305 NS
Government employee	0	0	0	0	
Unemployed	7	50	30	65.2	
Nature of job					χ^2=7.773 d.f=2 **p=0.021* S**
Sedentary worker	12	85.7	21	45.7	
Skill worker	1	7.1	22	47.8	
Technical worker	1	7.1	0	0	
Others	0	0	3	6.5	
Income per month					χ^2=0.018 d.f=1 p=0.894 NS
Rs. Below 15,000	10	71.4	32	69.6	
Rs.15,000 – 25,000	4	28.6	14	30.4	
Rs.25,000 – 35,000	0	0	0	0	
Rs.Above 35,000	0	0	0	0	
Dietary pattern					χ^2=0.513 d.f=1 p=0.474 (NS)
Vegetarian	4	28.6	9	19.6	
Non-vegetarian/ Mixed diet	10	71.4	37	80.4	
Specific unhealthy habits					χ^2=0.001 d.f=1 p=0.982 NS
Smoking	0	0	0	0	
Alcoholism	0	0	0	0	
Tobacco chewing	4	28.6	13	28.3	
None of the above	10	71.4	33	71.7	
All of the above	0	0	0	0	
Number of children					χ^2=3.223 d.f=1 p=0.073 NS
One	0	0	0	0	
Two	14	100	37	80.4	
More than two	0	0	9	19.6	
Nil	0	0	0	0	
Mode of delivery					χ^2=2.123 d.f=1 p=0.145 NS
Spontaneous vaginal delivery	9	64.3	38	82.6	
Cesarean section	5	35.7	8	17.4	
Others	0	0	0	0	
Nil	0	0	0	0	

*p<0.05, S – Significant, (NS) – Not Significant

The above table shows that the demographic variable educational status and nature of job (χ^2=8.552, p=0.014) and (χ^2=7.773, p=0.021) had shown statistically significant association with pre-test level of low back pain among women in the study and control group at p<0.05 level. The other demographic variables had not shown statistically significant association with pre-test level of low back pain among women in the study and control group.

Hence hypothesis H2 was accepted, there is significant association of pre-test level of low back pain level among women with their selected demographic variables.

Table 1: Frequency and percentae wise distribution of demographic and sleep variables among newborn.

(N=60)

SL. NO	DEMOGRAPHIC AND SLEEP VARIABLES	FREQUENCY (n)	PERCENTAGE (%)
1	**Age of the child**		
	8 – 14 days	27	45
	15 – 21 days	17	28.3
	22 - 28 days	16	26.7
2	**Gender**		
	Male	26	43.3
	Female	34	56.7
3	**Religion**		
	Hindu	27	45
	Christian	26	43.3
	Muslim	7	11.7
	Others	0	0
4	**Type of family**		
	Nuclear family	21	35
	Joint family	23	38.3
	Single parent family	16	26.7
5	**Current weight of the baby**		
	2.5 kg - 3 kg	11	18.3
	3 – 3.5 kg	38	63.4
	3.5 - 4 kg	11	18.3
6	**Type of delivery**		
	Spontaneous vaginal delivery(SVD)	23	38.3
	LSCS	28	46.7
	Other method	9	15
7	**What type of feeding your baby take?**		
	Breast feeding	44	73.3
	Expressed feeding	10	16.7
	Both	6	10
8	**Income of the parents**		
	Below Rs.5000 /month	18	30
	Rs. 5001- 10,000 /month	20	33.3
	Above Rs.10, 000 /month	22	36.7
	SLEEP VARIABLES		

9	**Sleeping arrangement**		
	Cradle	33	55
	Bed	17	28.3
	Floor	10	16.7
10	**Which position does your baby sleep most of the time**		
	Supine	25	41.7
	Lateral	24	40
	Both	11	18.3
11	**How does your baby fall asleep?**		
	While feeding	35	58.3
	Being rocked	18	30
	On lap	7	11.7
12	**Sleeping environment of the baby**		
	Room	31	51.7
	Hall	24	40
	Both	5	8.3
13	**How much time does your baby spend in sleep during day time**		
	Less than 5 hours	16	26.7
	5- 8 hours	34	56.7
	8- 12 hours	10	16.6
14	**How much time does your baby spend in sleep during night time**		
	Less than 5 hours	16	26.7
	5- 8 hours	15	25
	8- 12 hours	29	48.3
15	**Average number of night waking's per night**		
	Less than 3	10	16.7
	3- 5 times	32	53.3
	More than 5 times	18	30
16	**Duration of feed**		
	Less than 10 minutes	16	26.7
	11 – 20 minutes	28	46.6
	21 – 30 minutes	16	26.7

According to the frequency and percentage distribution of demographic and sleep variables among newborn, 27(45%) were in the age group of 8 – 14 days, 34(56.7%) were female Newborn. In considering the religion 27(45%) were Hindus, regarding the type of family 23(38.3%) of the Newborns were in Nuclear family. Considering the current weight of the child 38(63.4%) were in 3 – 3.5 kg. In regards to the type of delivery 28(46.7%) were LSCS. Regarding the type of

feeding 44(73.3%) newborns were breastfed. Regarding income 22(36.7%) earn above Rs.20, 000 /month, 33 people (55%) were in cradle in regard to sleeping circumstances, 25 (41.7%) of the neonates spent most of their time sleeping in the supine position, 35 (58.3%) of the babies fall asleep while breastfeeding. The baby's sleeping environment was taken into consideration when using thirty-one (51.7%) rooms. The infant slept for five to eight hours during the day 34 times (56.7%). Considering sleep patterns, 29 individuals (48.0%) slept 8–12 hours at night. 32 (53.3%) people woke up three to five times a night on average. The duration of feed 28 (46.6%) was from 11 to 20 minutes.

DISCUSSION

The first objective was to assess the pre-test and post-test level of low back pain among women.

In this study the result indicated that, in study group the pre-test level, 22(73.3%) had severe pain and 8(26.7%) had moderate pain. In the control group, 24(80%) had severe pain and 6(20%) had moderate pain in the pre-test.

After intervention in the post-test of study group, 16(53.3%) had moderate pain and 14(46.7%) had mild pain. In the control group, 17(56.3%) had severe pain and 17(56.3%) had moderate pain in the post-test.

The study was supported by a similar study conducted by **Ghanshyam Rakhecha et al., (2022)** conducted a quasi-experimental study on pre and post-test of nurse-led educational intervention package on back pain and activity of daily living in women with back pain in Jodhpur. The sample consists of 60 women. Non-probability consecutive sampling technique was used in this study. The data were collected by using VAS scale and a self-structured ADL checklist. The results shows According to the pre-test score, the majority of the women (70%) in the experimental group and (60%) in the control group had moderate pain. The post-test score revealed that (56.6%) of women in the experimental group experienced mild pain, while 53.3% of women in the control group experienced severe pain. The study concluded that the majority of women experienced low back discomfort, with participants identifying prolonged sitting as the most common aggravating factor.[6]

The second objective was to evaluate the effectiveness of Nursing care intervention package on reduction of low back pain among women.

In comparison between the study and control group the result indicates that, in pre-test, the mean and standard deviation of level of low back pain among women in the study group was 6.90±1.12 and in the control group was 7.06±0.73. The calculated 't' value was 0.678 and it shows statistically non-significant at $p<0.001$.

Similarly, in post-test, the mean and standard deviation of level of low back pain among women in the study group was 3.56±0.93 and in the control group was 6.93±0.86. The calculated 't' value was 13.586 and it shows statistically significant at $p<0.001$. Hence the Hypothesis H1 was accepted.

Mohsen Kazeminia et al. (2023) conducted a systematic review and meta-analysis on the impact of pelvic floor muscle-strengthening activities on low back pain, which provided support for the study. The study employed randomized clinical trials. The meta-analysis comprised 470 subjects in the control group and 456 subjects in the intervention group. The intervention group had a reduction in low back pain intensity of 1.261 ± 0.213 (SMD + 95% CI) with 12 = 87.60 more than the control group ($P <0.001$). The women's low back pain intensity dropped to 1.614±0.312 (95% CI). According to the study's findings, workouts that strengthen the pelvic floor muscles considerably lessen the severity of low back discomfort. Consequently, these workouts might be considered a component of low back pain management plan.[7]

Similarly, a study on the impact of educational nursing interventions on pain and quality of life among women with low back pain was carried out in Egypt by Amany Youssef Sharaf et al. in 2020. There are fifty samples in the sample. In this investigation, a random sample strategy was employed. The World Health Organization Quality of Life-brief (WHOQOL-BREF) questionnaire, the Knowledge Structured Interview schedule, and the Pain Numeric Rating Scale were used to gather the data. According to the findings, the women in the study were 40.94± 9.50 years old on average. With a mean BMI of 28.25 ±3.54, most of them were overweight or obese. Women's LBP levels before and after the educational nursing interventions differed in a highly statistically significant way, with a mean % decrease in LBP levels after the interventions (46.0±21.31).[8]

The third objective was association between the pre-test levels of low back pain among women with the selected demographic variables.

The demographic variable education status (χ^2=8.552, p=0.014) and nature of job (χ^2= 7.773, p=0.021) had shown statistically significant association with pre-test level of low back pain among women in the study group at $p<0.05$ level. The other demographic variables had not shown statistically significant association with pre-test level of low back pain among women in the study group and control group.

A related study on exercises for low back pain in middle-aged women in Puducherry using a quasi-experimental research method by Sumathy (2016) provided support for the study. Forty people with low back discomfort make up the sample. In this study, the purposeful sampling strategy was applied. The demographic variable demonstrated a statistically significant correlation with the pre-test level (p=0.010) and (p=6.563). The Mc Caffery pain scale and a demographic proforma were used to gather the data. According to the results, the average pre-test score was 5.75, and the average post-test score was 3.80. The corresponding standard deviations were 1.12 and 0.95, respectively.[9]

The fourth objective was association between the pre-test levels of low back pain among women with the selected clinical variables.

In the present study, the clinical variable body mass index (χ^2=12.23, p=0.001) had shown statistically significant

association with pre-test level of low back pain among women in the study group at $p<0.01$ level. The other clinical variables had not shown statistically significant association with pre-test level of low back pain among women in the study group and control group.

The study was supported by a similar study by Mehdi Pakbaz et al., (2019), who conducted a quasi-experimental study on effectiveness of the back school program on the low back pain and functional disability of Iranian women. The sample consists of 64 participants. Two-stage stratified cluster sampling technique was used in this study. The data were collected by using self-report visual analogue scales and Roland–Morris Disability questionnaire. There were significant association in pain and the 't' value is ($t=5.78$, $\chi^2=4.887$).[10].

CONCLUSION:

The purpose of the current study was to evaluate how well a nursing care intervention package reduced low back pain in women in a particular Puducherry hamlet. Comparatively, the computed "t" value within the study group was 25.673. The computed "t" value for the control group was 1.439. In contrast, the results show that the computed "t" value was 0.678 when comparing the study and control groups. The computed "t" value in the post-test was 13.586. According to the study, the study group's post-test score significantly decreased in comparison to the control group. Therefore, it can be said that the nursing care intervention package aids in lowering women's levels of low back pain.

REFERENCES

[1] Low back pain (LBW) – World Health Organization Guidelines for incidence of low back pain (2022).
[2] Bang AA, Bhojraj SY, Deshmukh M, Joshi VR, Yermal T, Kalkotwar s, Bang AT. Epidemiology of pain in back and extremitiez in rural population: A community-based estimation of age- and sex- specific prevalence, distribution, duration and intensity of pain, number of painful sites and seasonality of pain during twelve months in rural Gadchiroli, India. J Glob Health. 2021 Nov 27 ; 11 : 12002.
[3] V. V. A, Muthunarayanan L. Prevalence of pain among female patients attending mobile medical camp in a rural block of Tamilnadu, India. Inj J Community Med Public Health. 2017 Jan. 5;3(6):1606-11.
[4] Gautam M Shetty**.** Prevalence of low back pain in India: Affiliations expand 2022 May 12;24(1).
[5] Hrkać A, Bilic D, Cerny-Obrdalj E, Baketaric I, Puljak L. Comparison of supervised exercise therapy with or without biopsychosocial approach for chronic nonspecific low back pain: a randomized controlled trial. BMC Musculoskelet Disord. 2022 Nov 8;23(1):966.
[6] Rakhecha G, Vyas H, Shekhar S, Gonnade NM. Effectiveness of nurse-led educational intervention package on back pain and activity of daily living in primigravidae women with back pain. Int J Community Med Public Health 2022; 9:2596- 603.
[7] Kazeminia M, Rajati F, Rajati M, The effect of pelvic floor muscle-strengthening exercises on low back pain: a systemic review and meta-analysis on randomized clinical trials. Neurol Sci. 2023 Mar;44(3):859-872.
[8] Youssef Sharaf, A., Mohammed Syam, N., Fathy Ahmed, R. Effects of Educational Nursing Interventions on Pain, and Quality of Life among Nurses with Low Back Pain.. Egyptian Journal of Health Care. 2020; 11(3): 703-721.
[9] P. Sumathy. Effectiveness of Exercises on Low Back Pain among Middle Aged Women at Puducherry. Nitte University Journal of Health Science. 6(1): 13-15.
[10] Pakbaz M, Hosseini MA, Aemmi SZ, Gholami S. Effectiveness of the back school program on the low back pain and functional disability of Iranian nurse. J Exerc Rehabil. 2019 Feb 25; 15(1):134-138.