A Study to Assess the Effectiveness of Hydroptherapy as Complementary Therapy for Client with Arthritis among Rural Area

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ABSTRACT

Background: A study to assess the effectiveness of hydrotherapy as complementary therapy for patients with arthritis among rural area. Material And Method: The quantitative research approach with A quasi experimental study design is used in this study. Two group one control group one experimental group was used in this study to achieve the objectives. The sample size of the study consists of 50 patients with study pain among clients with arthritis at Kondanchery. Clients were selected using the purposive sampling technique method who filled the inclusion criteria the demographic variables and Numerical Pain Rating Scale used for data was collected to level of pain among arthritis RESULTS: shows that in the control group, the pretest mean score of pain was 7.00 ± 1.19 and the post-test mean score was 6.88 ± 1.17. The mean difference pain score was 0.12. The calculated paired 't' test value of t = 1.809 shows that there was no significant reduction in the level of pain between the pretest and the post-test. 4 shows that the clinical variable presence of co-morbidities (χ^2**=9.881, p=0.042**) had shown statistically significant association with post-test level of pain among patients with arthritis at p<0.05level and the other demographic variables had not shown statistically significant association with post-test level of pain among patients with arthritis. CONCULSION: to assess the effectiveness of hydrotherapy as complementary therapy for to reduce pain

KEYWORDS: *Arthritis, hydrotherapy, complementary therapy*

INTRODUCTION

Arthritis is an age- related, bone degeneration aliment where in the protective tissue on top of the joints gets damaged. The causes may vary from age-related wear and tear to chronic infection, severe injury or lack of any nutrients.

Arthritis is age-related bone loss that damages the protective tissue covering the joints. Causes range from age-related wear and tear to chronic infections, fections, serious injuries, and nutritional deficiencies. Arthritis has been known to mankind since ancient times and can be observed in most age groups. References to arthritis can be found in texts for centuries. Prior to 1600, arthritis was rare. During the Age of Discovery, it spread across the Atlantic Ocean. The disease was given its present name in 1859. In the past, Indian literature consisted of information on arthritis and did not specify the type of arthritis. The 18th century and his 19th century saw great progress in understanding and diagnosing arthritis. There is no specific treatment for this condition, but certain measures such as patient education, exercise, rest, and surgery are used to relieve symptoms and treat arthritis. Rheumatoid arthritis (RA) belongs to the family of systemic connective tissue diseases and is a chronically progressive inflammatory disease that primarily affects peripheral joints 1. Although progressive, the disease has periods of high and low disease activity that are reflected in symptoms and function. As the disease worsens, joints are left with irreversible changes2. Characteristic clinical features of rheumatoid arthritis usually include: morning stiffness lasting more than an hour, pain (usually more pronounced at rest), swollen joints, deformity,

and limitation of physical activity and a consequent deterioration in quality of life (QOL). Fassbender4 defines three different determinants that describe the big picture Rheumatoid arthritis: An exudative inflammatory process that causes swelling, pain, and stiffness. proliferative destructive processes that affect joint destruction; primary necrosis, such as enzymatic collagenolytic processes. B. Myocardium, blood vessels and sclera of the eye. Previous studies have compared patients with a documented cause of pain to those with less certain pain etiology through samples from patients with CP and rheumatoid arthritis. In general, these studies found significant differences between samples, with CP patients experiencing greater pain and distress than those diagnosed with rheumatoid arthritis. However, increased psychological distress may be due to greater pain reported by patients diagnosed with CP. The potential lack of distinct structural and pathophysiological abnormalities in individuals with chronic soft tissue pain, combined with longer wait times to see specialists, may make CP patients more vulnerable to You may experience great pain.

METHODS AND MATERIALS

Study Design: Quantitative research approach pre experimental study was adopted for the present study: A study to assess the effectiveness of hydrotherapy as complementary therapy for patients with arthritis among rural area *Study Setting:* The study was conducted for duration of 4 week on 3 JUNE 2022 till 24 JUNE 2022 at kondcherry of host institution *Ethical Approval:* After obtaining the ethical clearance from institutional Ethical committee (IEC) of Saveetha Institute of medical and Technical science and a formal permission from the head of village at kondcherry to conduct the study was conducted *Study participant:* Total of 50 diabetes client who fulfill and meets the inclusion criteria were recruited as study participants. The inclusion criteria Patients with arthritis. Clients who are willing to participate in the study. The exclusion criteria Patients with other co-morbid condition. Clients who are not willing to participate in the study. *Sampling Technique:* A Total of 50 diabetes client were recruited based on the inclusion criteria by using purposive sampling technique. *Informed Consent:* The purpose of the study was explained clearly in depth to each of the study participant and written informed content was obtained for them *PreAssessment:* The demographic and clinical information was collected using numerical rating scale after estimating level of pain among arthritis. *Post-test:* the level of pain among arthritis client

RESULTS AND DISCUSSION

Description of the demographic variables shows that in the experimental group, most of the patients with arthritis, 11(44%) were aged between 30 – 40 years, 16(64%) were male, 13(52%) had primary education, 14(56%) were private employee, 10(40%) had an income of Rs.5001 – 10000 and Rs.10001 – 20000 per month respectively, 17(68%) were Hindus, 25(100%) were residing in rural area, 17(68%) were married, 18(72%) were non-vegetarian, 15(60%) had the duration of pain 3 – 5, 14(56%) had less than120/80 mmHg, 16(64%) had no substandard behaviour and 16(64%) had hypertension as comorbidity.

The table 1 shows that in the control group, most of the patients with arthritis, 10(40%) were aged between 30 – 40 years, 14(56%) were male, 16(64%) had primary education, 13(52%) were private employee, 10(40%) had an income of Rs.5001 – 10000 and Rs.10001 – 20000 per month respectively, 18(72%) were Hindus, 25(100%) were residing in rural area, 20(80%) were married and were non-vegetarian, 15(60%) had the duration of pain 3 – 5, 14(56%) had less than120/80 mmHg, 16(64%) had no substandard behaviour and 16(64%) had hypertension as comorbidity.

Demographic Variables	Experimental Group		Control Group	
	F	%	F	%
Age in years				
30 – 40	11	44.0	10	40.0
41 – 50	8	32.0	8	32.0
51 – 60	4	16.0	6	24.0
61 – 70	2	8.0	1	4.0
Gender				
Male	16	64.0	14	56.0
Female	9	36.0	11	44.0

Education				
No formal education	2	8.0	2	8.0
Primary education	13	52.0	16	64.0
Secondary education	8	32.0	6	24.0
Graduate	2	8.0	1	4.0
Occupation				
Daily wages	9	36.0	11	44.0
Government employee	-	-	-	-
Private employee	14	56.0	13	52.0
Unemployment	2	8.0	1	4.0
Income per month				
Below Rs.5000	3	12.0	3	12.0
Rs.5001 – 10000	10	40.0	10	40.0
Rs.10001 – 20000	10	40.0	10	40.0
Above Rs.20001	2	8.0	2	8.0
Religion				
Hindu	17	68.0	18	72.0
Muslim	3	12.0	4	16.0
Christian	5	20.0	3	12.0
Others	-	-	-	-
Residence				
Urban	-	-	-	-
Rural	25	100.0	25	100.0
Marital status				
Married	17	68.0	20	80.0
Single	2	8.0	2	8.0
Divorced	1	4.0	0	0
Widowed	5	20.0	3	12.0
Dietary pattern				
Vegetarian	7	28.0	5	20.0
Non-vegetarian	18	72.0	20	80.0
Duration of pain				
<2	6	24.0	6	24.0
3 – 5	15	60.0	15	60.0
>6	4	16.0	4	16.0
Blood pressure level				
Less than 120/80 mmHg	14	56.0	14	56.0
Less than 140/90 mmHg	7	28.0	9	36.0
Less than 160/100 mmHg	4	16.0	2	8.0
Above 160/100 mmHg	-	-	-	-
Any substandard behaviour				
Alcohol	3	12.0	2	8.0
Smoking	5	20.0	6	24.0
Drug abuse	1	4.0	1	4.0
Nil	16	64.0	16	64.0
Presence of co-morbidities				
Hypertension	16	64.0	16	64.0
Diabetes	7	28.0	8	32.0
Renal failure	-	-	-	-
Heart failure	2	8.0	1	4.0

Fig 1: Percentage distribution of age of the patients with arthritis in the experimental and control group
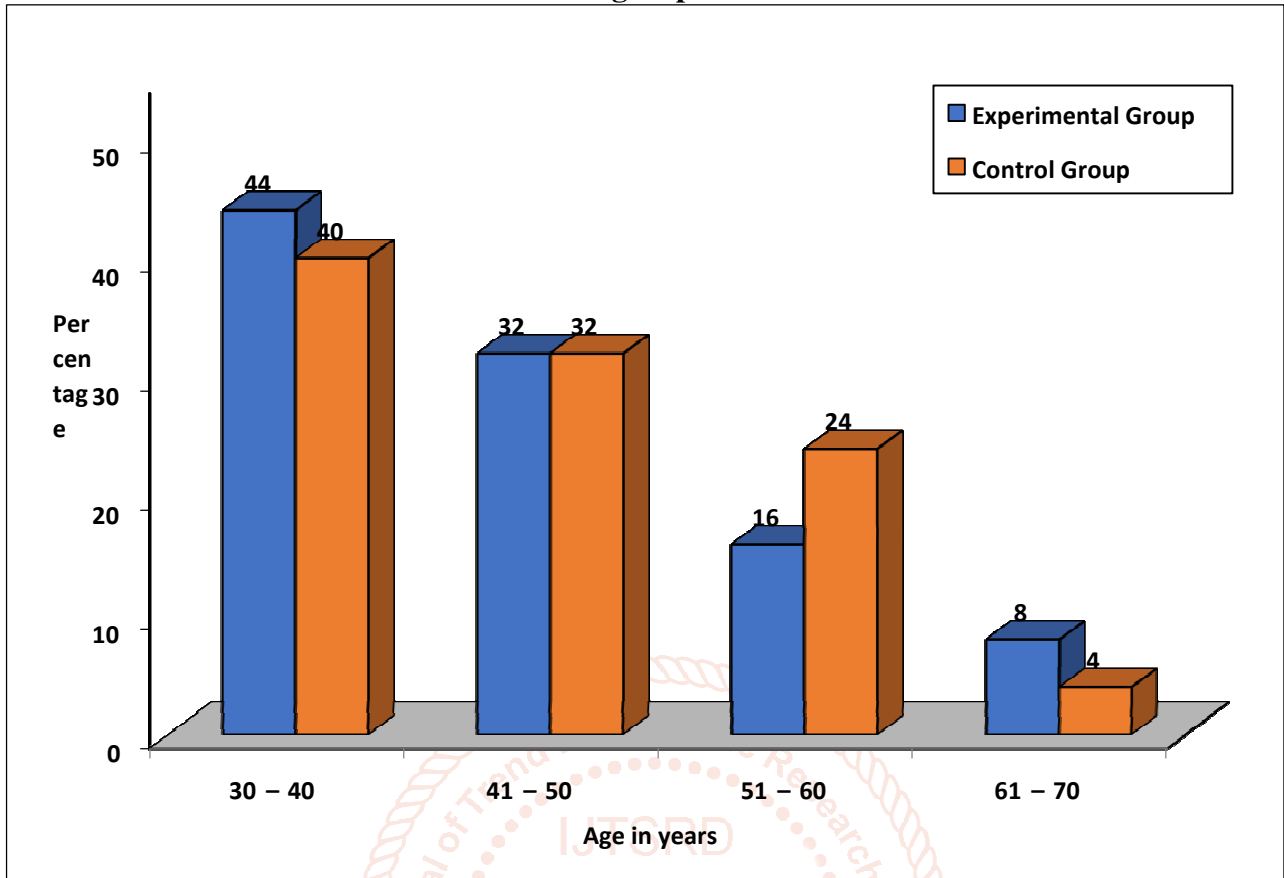

Fig 2: Percentage distribution of presence of co-morbidity of the patients with arthritis in the experimental and control group
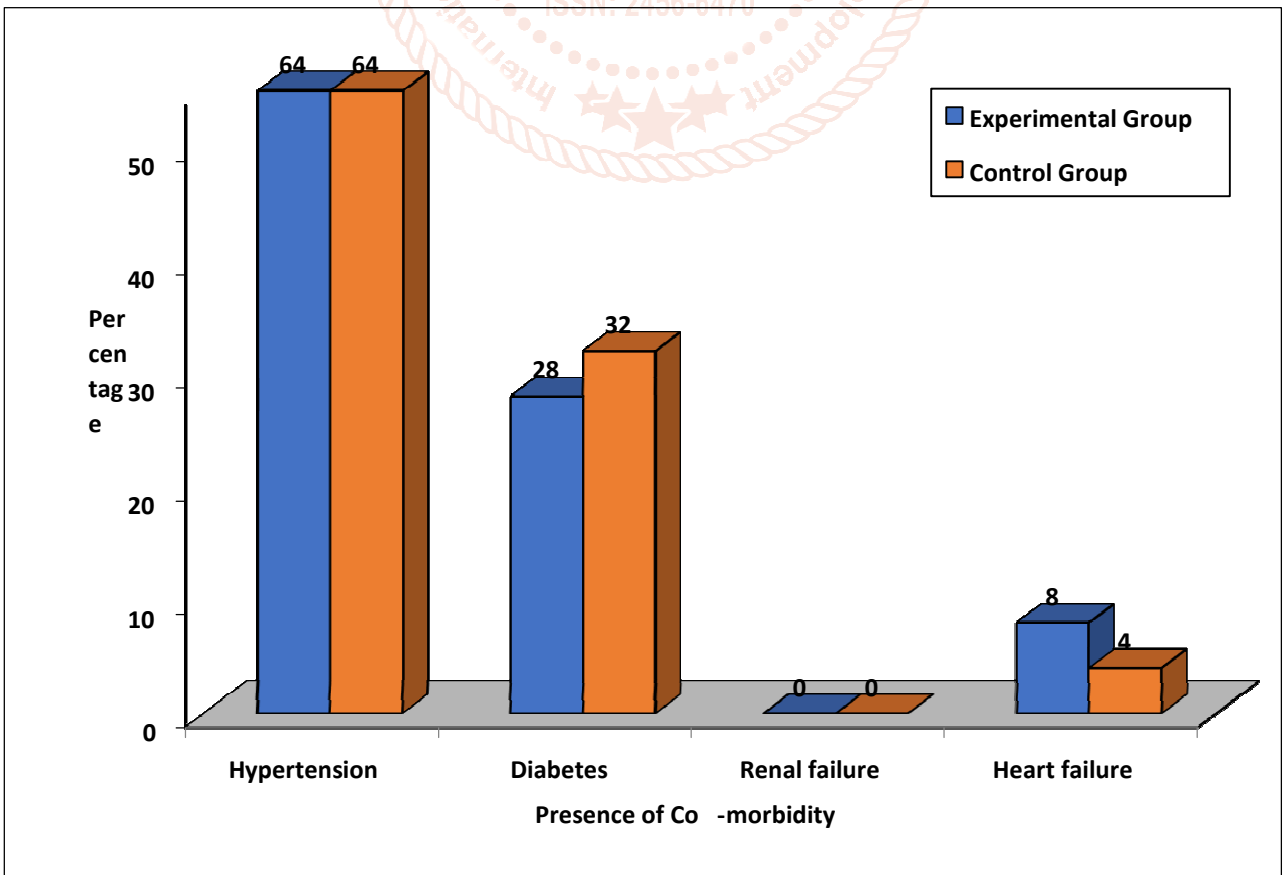
Table 2 Frequency and percentage distribution of pretest and post-test level of pain among patients with arthritis in the experimental and control group

N= 50(25+25)

Pain	Experimental Group				Control Group			
	Pretest		Post-test		Pretest		Post-test	
	F	%	F	%	F	%	F	%
No pain (0)	0	0	2	8.0	0	0	0	0
Mild Pain (1 – 3)	0	0	17	68.0	0	0	0	0
Moderate Pain (4 – 6)	11	44.0	6	24.0	8	32.0	8	32.0
Severe Pain (7 – 9)	14	56.0	0	0	17	68.0	17	68.0
Worst Possible Pain (10)	0	0	0	0	0	0	0	0

The above table 2 shows that in the pretest of experimental group, 14(56%) had severe pain and 11(44%) moderate pain whereas after the administration of hydrotherapy in the post-test, 17(68%) had mild pain, 6(24%) had moderate pain and 2(8%) had no pain.

The above table 2 shows that in the pretest and post-test of control group, 17(68%) had severe pain and 8(32%) moderate pain.
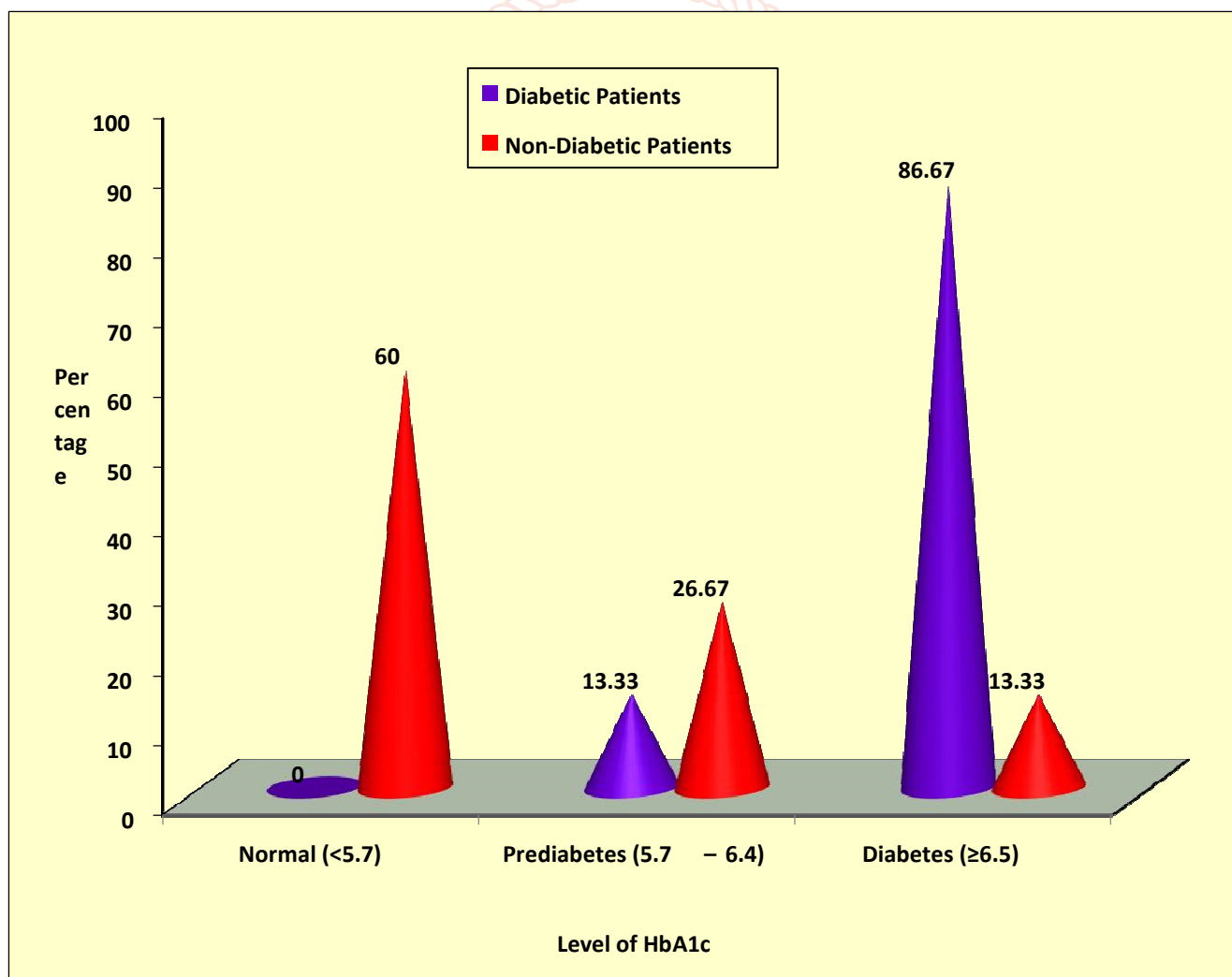

FIG 3: Percentage distribution of level of HbA1c among post covid diabetic and non-diabetic patients

EFFECTIVENESS OF HYDROTHERAPY AS COMPLIMENTARY THERAPY FOR PATIENTS WITH ARTHRITIS.

Table 3: Comparison of pretest and post-test level of pain among patients with arthritis within and between the experimental and control group

N = 50(25+25)

Group	Pretest		Post-test		Mean Difference Score	Paired "t" test Value
	Mean	S.D	Mean	S.D		
Experimental Group	6.76	1.56	2.56	1.23	**4.20**	**t = 16.267 p=0.0001, S*****
Control Group	7.00	1.19	6.88	1.17	0.12	t = 1.809 p=0.083, N.S
Mean Difference Score	0.24		**4.32**		***p<0.001 S – Significant N.S – Not Significant	
Student Independent "t" test Value	t = 0.611 p=0.544 N.S		**t = 12.757 p=0.0001 S***			

The above table 3 shows that in the experimental group, the pretest mean score of pain was 6.76±2.56 and the post-test mean score was 2.56±1.23. The mean difference pain score was 4.20. The calculated paired 't' test value of t = 16.267 shows that there was significant reduction in the level of pain which was found to be statistically significant at p<0.001 level. This clearly infers that the administration of hydrotherapy among patients with arthritis in the experimental group was found to be effective in reducing the level of pain in the post-test.

The above table 3 shows that in the control group, the pretest mean score of pain was 7.00±1.19 and the post-test mean score was 6.88±1.17. The mean difference pain score was 0.12. The calculated paired 't' test value of t = 1.809 shows that there was no significant reduction in the level of pain between the pretest and the post-test.

The table also shows that the calculated student independent 't' test value of t =0.611 in the pretest was not found to be statistically significant.

The table also shows that the calculated student independent 't' test value of t =12.757 in the post-test was found to be statistically significant at P<0.001 level.. This clearly infers that the administration of hydrotherapy among patients with arthritis in the experimental group was found to be effective in reducing the level of pain in the post-test than the patients in the control group who had undergone normal routine protocol.

ASSOCIATION OF LEVEL OF PAIN AMONG ARTHRITIS PATIENTS WITH SELECTED DEMOGRAPHIC AND CLINICAL VARIABLES

Table 4: Association of post-test level of pain among patients with arthritis with their selected demographic variables in the experimental group

n = 25

Demographic Variables	Frequency	Chi-Square & p-value
Age in years		
30 – 40	11	
41 – 50	8	χ^2=8.350 d.f=6 p=0.216 N.S
51 – 60	4	
61 – 70	2	
Gender		
Male	16	χ^2=1.341d.f=2 p=0.511 N.S
Female	9	
Education		
No formal education	2	
Primary education	13	χ^2=8.689 d.f=6 p=0.192 N.S
Secondary education	8	
Graduate	2	

Occupation		
Daily wages	9	χ^2=1.017 d.f=4 p=0.907 N.S
Government employee	-	
Private employee	14	
Unemployment	2	
Income per month		
Below Rs.5000	3	χ^2=2.541 d.f=6 p=0.864 N.S
Rs.5001 – 10000	10	
Rs.10001 – 20000	10	
Above Rs.20001	2	
Religion		
Hindu	17	χ^2=4.221 d.f=4 p=0.377 N.S
Muslim	3	
Christian	5	
Others	-	
Residence		
Urban	-	-
Rural	25	
Marital status		
Married	17	χ^2=10.835 d.f=6 p=0.094 N.S
Single	2	
Divorced	1	
Widowed	5	
Dietary pattern		
Vegetarian	7	χ^2=0.733 d.f=2 p=0.693 N.S
Non-vegetarian	18	
Duration of pain		
<2	6	χ^2=2.533 d.f=4 p=0.639 N.S
3 – 5	15	
>6	4	
Blood pressure level		
Less than 120/80 mmHg	14	χ^2=2.346 d.f=4 p=0.672 N.S
Less than 140/90 mmHg	7	
Less than 160/100 mmHg	4	
Above 160/100 mmHg	-	
Any substandard behaviour		
Alcohol	3	χ^2=8.092 d.f=6 p=0.231 N.S
Smoking	5	
Drug abuse	1	
Nil	16	
Presence of co-morbidities		
Hypertension	16	**χ^2=9.881 d.f=4 p=0.042 S***
Diabetes	7	
Renal failure	-	
Heart failure	2	

*p<0.05, S – Significant, N.S – Not Significant

The table 4 shows that the clinical variable presence of co-morbidities (**χ^2=9.881, p=0.042**) had shown statistically significant association with post-test level of pain among patients with arthritis at p<0.05level and the other demographic variables had not shown statistically significant association with post-test level of pain among patients with arthritis.

CONCLUSION

This study concluded that hydrotherapy administered among the patients with arthritis found to be effective in reducing the level of pain among the patients. Hence it is suggested that hydrotherapy can be applied as complimentary therapy for the reduction of pain among arthritis patients in the clinical setting.

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