Hydrotherapy on the Intensity of Neuropathic Pain in Sufferers with Diabetes Mellitus

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Abstract:-

Background: Neuropathic pain is a type of pain caused by or resulting from a primary injury or dysfunction of the nervous system. Cooperation in nursing care is necessary to reduce the incidence of ambulatory neuropathy. The aim of this study was therefore to evaluate the effectiveness of contrast baths on pain caused by leg neuropathy in diabetic patients. Design: Quasiexperimental design where Pretest Posttest Nonequivalent group design, meeting the inclusion criteria, was selected by non-probability convenience sampling technique. Materials and methods: The study was conducted with 30 patients in the experimental and 30 patients in the control group. Galer Neuropathy A pain assessment tool was used. Results: A comparison of the mean, SD and mean percentage of the control group's preand post-test scores shows that in the pre-test the mean score of the control group was (89.4 ± 2.81) , which is 89%, while in the post-test the mean score was (68, 1 ± 2.55), which is 68%. It reveals a difference of 21%. Similarly, for the interventional group, the mean score in the pretest was (88.3±2.97), which is 88%, while in the posttest, the mean score was (32.5±2.28), which is 33%. It reveals a distinction of 55%. A contrast bath appeared to be effective in reducing neuropathic pain in patients with diabetes mellitus. Conclusion: The results showed that the interventional group of diabetics experienced a reduction in neuropathic pain after the contrast bath. Therefore, a contrast bath is an effective intervention to reduce neuropathy pain in diabetic patients.

Keyword:- Effectiveness, Contrast Bath, Neuropathy Pain.

I. INTRODUCTION

"Diabetes is the silent killer which kills part by part of our life".

Dr. Anurag Sharma

Diabetic peripheral neuropathy is a common complication of diabetes. It can cause health problems such as leg ulcers, leg amputations and neuropathic pain. There are many new tests that can be done to diagnose and detect diabetic neuropathy at an early stage. Glycemic control reduces the risk of diabetic neuropathy in type I diabetes. Although glycemic control or drug therapy is effective in neuropathy, treatment is often inadequate. Diagnostic methods can help early detection of diabetic neuropathy in clinical and research settings.

Contrast baths, also known as alternating baths, are said to promote vasoconstriction and relaxation and improve neuropathy reduction in diabetic patients. The procedure can alternate between warm and cold water for both feet. The process will vary depending on different showers and different shower climates. Experts who can contribute this endeavors include doctors, vocational therapists and physiotherapists. In some cases, family members and clients can receive training and play an important role in treatment. Treatment can be carried out in hospitals, nursing homes and at the patient's home.

The rapid development of science and technology in the 21st century has made people pay attention to their own health, because everyone in the world realizes that healthy drinks are cleaner. We are dealing with many non-communicable diseases (silent killer) caused by bad habits, malnutrition and overeating. The 66th World Health Assembly reported that non-communicable diseases have become a major global burden; therefore, in May 2013, they created a project to organize free camps for examination and treatment of people affected by non-communicable diseases.

> Objectives

- To evaluate the level of neuropathic pain in patients with diabetes mellitus in the experimental and control groups before and after the contrast bath.
- To compare the effectiveness of contrast bath on neuropathy pain between experimental and control group of patients with diabetic mellitus.
- To determine the association between posttest scores of neuropathic pain in patients with diabetes mellitus in the experimental and control groups with their demographic variables.

> Hypotheses

- H1: There is a significant difference in the level of neuropathic pain between patients with diabetes mellitus in the experimental and control groups before and after the contrast bath.
- H2: There is a significant effect of the contrast bath on neuropathy between the experimental and control groups of patients with diabetes mellitus.

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• H3: There is a significant association between the posttest score of neuropathic pain in patients with diabetes mellitus in the experimental and control groups with their demographic variables.

II. REVIEW OF LITERATURE

Higgins T et al (2012) organized an interventional study to evaluate hydrotherapy as an evaluate accomplish for a imitated rug by match, randomly dividing 24 soccer players into 3 groups (8 per group). One group underwent cold water immersion therapy twice (10° C, 5 minutes). The second group received a different bath (hot 38° C, cold 10° C, 5 cycles) and the third group underwent rebound. All three drill sessions took place. The findings show that cold water therapy and performance are more effective for athletes recovering from team sports than for athletes rebounding from a rugby match.

Shih CY et al. each player changed into assigned 2 separate assessment rooms. contributors first held their palms in hot water (40°C) for 3 minutes after which held their fingers in cold water (18°C) for 1 minute, repeating this 3 times. 2nd, participants engross their palms in warm water (forty°C) for 10 mins. the use of a colour Doppler ultrasound scanner to degree AMBV concluded that the second heat-up segment should be used longer all through the contrast bath to make sure sufficient blood waft.

Jessica Marsh (2014) conducted an experimental study in a massage parlor in Halifax, Canada to understand the effectiveness of comparative baths in patients with ankle and foot conditions. The researchers alternated 3 cycles of controlled bathing with hot water of 36-38 degrees Celsius (3 minutes) and cold water of 4-21 degrees Celsius (10 seconds to 1 minute), usually ending with cold water. The results showed a reduction in ankle and foot pain.

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III. METHODOLOGY

Design: Quasi-experimental design. Setting: This study was conducted in a selected hospital. Sample: The sample selected for this study consisted of patients with diabetes mellitus who have been willing to participate and gift at some point of the facts series length. Sample size: The total sampling portion was 30 patients with diabetes mellitus, of which 15 patients belonged to the observational group and 15 patients to the interventional group. Sampling Technique: procedure. Instrument Non-probability sampling development: Part A includes demographic characteristics of patients with diabetes mellitus, i.e. age, sex, duration of diabetes mellitus, duration of neuropathic pain, treatment of diabetes mellitus, comorbidity. Part B includes the Geller Neuropathy Pain Scale. Eight assessed the quality of neuropathic pain, while the last two assessed dimensions of pain (intensity and discomfort). Data collection procedure: Statistics collection passed off over a period of 4 weeks. Permission turned into acquired from the CEO of the chosen clinic. Formal permission became received from the govt director of the selected health facility to conduct the look at. The researcher amassed statistics from each the manipulate institution and the interventional institution. patients who met the standards had been taken into consideration the sample. The reason of the have a look at was explained to the sufferers and to make sure their cooperation.

IV. RESULT

Table 1 Frequency and Percentage Distribution of Manage and Experimental Group of Sufferers with Diabetic Mellitus in Step with their Demographic Variables (N1 = 15, N2 = 15)

	len Demographie va	1100105(111 - 15, 112 - 15)				
Demographic variables	Control group		Experimental group			
	(N1)	(%)	(N ₂)	(%)		
	1. Age	in years				
b) 30 - 40 years	0	0	0	0		
c) 41- 50 years	4	27	4	27		
d) 51- 60 years	4	27	5	33		
e) Above 60 Years	7	46	6	40		
	2.	Gender				
a) Male	6	40	7	47		
b) Female	9	60	8	53		
3. Duration of diabetes mellitus						
a) <2 years	2	13	1	7		
b) 2 - 5 years	3	20	2	13		

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c) More than 5 years	10	67	12	80					
	4. Duration of neuropathy pain								
a) <6 months	2	13	3	20					
b) 6 months - 1 year	b) 6 months - 1 year 1 7 1 7								
c) More than 1 year	12	80	11	73					
5	5. Treatment for Diabetes mellitus								
a) Oral hypoglycemic agent	a) Oral hypoglycemic agent 8 53 10 67								
b) Insulin	2	13	3	20					
c) Both	5	34	2	13					
6. Co- morbid Illness									
a) Yes	2	13	3	20					
b) No	13	87	12	80					

Table 2 Frequency and Percentage Distribution of Pre and Publish Check Scores on Neuropathy Pain among Patients with Diabetic Mellitus in Control Group (N1= 15)

Level of neuropathy pain	Control group					
	Pro	e test	Post test			
	Frequency	Percentage	Frequency	Percentage		
Mild	0	0	0	0		
Moderate	5	33	12	80		
Severe	10	67	3	20		

Table 3 Frequency and Percentage Distribution of Pre and Submit Take a Look at Rankings on Neuropathy Pain Amongst Sufferers with Diabetic Mellitus in Experimental Institution ($N_2=15$)

Level of neuropathy pain	Experimental group				
	Pro	e test	Post test		
	Frequency	Percentage	Frequency	Percentage	
Normal	0	0	10	67	
Moderate	6	40	5	33	
Unchanged vital parameters	9	60	0	0	

 Table 4 place Sensible Comparison of Imply, SD, and Suggest Percentage of Control Group and Experimental Organization Pre and Post Take a Look at Rankings on Neuropathy Pain.

Level of Neuropathic Pain	Maxi	Control Group						Mean
among Patients with Diabetic Mellitus	mum Scores	Pre Test Scores		Post Test Scores			Difference	
		Mean	SD	Mean (%)	Mean	SD	Mean (%)	
Control group	100	89.4	2.81	89	68.1	2.55	68	21
Experimental group	100	88.3	2.97	88	32.5	2.28	33	55



Fig 1 Bar Diagram Showing the Mean Percentage Distribution of Patients with Diabetes Mellitus According to their Pre and Post Test Scores of Neuropathy Pain

Table 5 Unpaired t Test Value of Posttest Scores on Clinical Parameters in Control Group and	and Experimental Group.
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S. No	Patients with diabetic mellitus	Unpaired 't' value	Table value	Level of significant
	Neuropathy pain	7.53	2.09	P<0.05 S
Df =28		Table Value=2.05	Si	gnificant at P<0.05

 Table 6 Association between Experimental Group Posttest Scores and Demographic Variables of Neuropathy Pain among

 Patients with Diabetic Mellitus.

S. No	Demographic variables	Df	χ ² Value	Table Value	Level of significance
1.	Age	2	1.3	3.84	p>0.05 NS
2.	Gender	1	0.7	3.84	p>0.05 NS
3.	Duration of diabetes mellitus	2	2.58	3.84	p>0.05 NS
4.	Duration of neuropathy pain	2	0.33	3.84	p>0.05 NS
5.	Treatment of diabetes mellitus	2	1.49	3.84	p>0.05 NS
6	Co morbid illness	2	0.89	3.84	p>0.05 NS

S at P<0.05 NS at P>0.05

V. DISCUSSION

The frequency and percentage distribution of neuropathy in the control group showed that before the experiment, 67% had severe neuropathy and 33% had moderate pain, and after the test, 80% had severe neuropathy and 20% had severe neuropathy. Thus, this indicates that there was little change in the scores of the control sample after the tests.

The frequency and percentage of neuropathy in the interventional group showed that before the experiment, 60% had severe and 40% had mild neuropathy, and after the test, 67% had mild neuropathy and 33% had moderate pain. painful neuropathy. Comparative baths appear to be effective in reducing neuropathy in diabetics.

By comparing the mean, standard deviation and mean score of the control group before and after the test, the mean score of the control group before and after the test was (89.4 \pm 2.81), which was 89%. The result of the post-test was (68, 2.55 \pm 1) which is 68 percent. You can see that there is a 21% difference.

Similarly, the mean pre-test score of the interventional group was (88.3 ± 2.97), which is 88%. the mean post-test score was (32.5 ± 2.28), which is 33%. Makes a 55% difference. Comparative baths appear to be effective in reducing neuropathy in diabetic patients.

Paired t tests were calculated to evaluate the validity of pre- and post-test scores in observational and interventional groups of different types of neuropathy. The total competition Volume 9, Issue 6, June - 2024

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score is 7.42 for the control group and 14.33 for the experimental group, which is higher than the language value (2.15). Comparison spas seem to be effective in reducing neuropathy in diabetic patients.

Unpaired "t" tests were also calculated to verify the validity of the observational and interventional groups Posttest scores for neuropathic pain. The overall uncombined test score is 7.53, a high score compared to language value (2.05). A comparison bath appears to be superior in reducing neuropathy in diabetic patients in the experimental group than in the control group.

The results showed that there was no significant effect on the post-test scores of the interventional group and age, sex, diabetes duration, diabetes treatment and comorbidities (P>0.05). Therefore, observed the score difference is just a matter of luck and not a real difference. Comparative bathing seems to be effective in reducing neuropathy in diabetics, regardless of population differences.

VI. CONCLUSION

The results showed that the mean score of patients in the control group was (68.1 ± 2.55) or 680%, While the mean score of patients in the experimental group was (32.5 ± 2.28) or 33%. Paired t test (t = 7.42 and t = 14.31) showed that bathing ratio had a significant effect on reducing neuropathy in diabetic patients. Chi-square did not show any relationship between post-test scores and demographic variables such as age, gender, duration of diabetes, duration of neuropathy, blood therapy diabetes, and co morbidities.

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