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RESEARCH ARTICLE

A study to assess the effectiveness of acetic acid soak in healing foot ulcer among diabetic patients at Sree Balaji Medical College and Hospital, Chennai.

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Abstract

of diabetic foot ulcer among the diabetic patient before giving acetic acid soak, the effectiveness of acetic acid soak among diabetic patient with diabetic foot ulcer and to determine the association between post test level of diabetic foot ulcer and selected demographic variables such as age, gender, religion, domicile, education, source of health information, working pattern, family history, duration of diabetic mellitus of the diabetic patient. A pre experimental approach was used and a one group pre test post test approach was adopted. A total of 60 diabetic patient participated in the present study, who had either mild or moderate diabetic foot ulcer and were residing in Sree Balaji Medical College and Hospitals at Chennai and those who fulfilled the inclusion criteria. A standardized tool was used for data collection after getting their informed consent. Bates – Jensen wound assessment Scale was used to categorize the participants as whether they have mild, moderate level of diabetic foot ulcer. Convenient sampling method was adopted to select the sample of the study. The study concluded that acetic acid soak improves the level of diabetic foot ulcer of diabetic patient in Sree Balaji Medical College and Hospitals at Chennai. The difference was found to be statistically significant at $p < 0.001$ level which indicates the effectiveness of acetic acid soak in improving the diabetic foot ulcer. Acetic acid soak is beneficial for improving the diabetic foot ulcer of diabetic patient.

The aim and objective of the study was to assess the level

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Introduction:-

Diabetes Mellitus is a group of metabolic disorders characterized by elevated levels of glucose in the blood (hyperglycemia), resulting from defects in insulin secretion, insulin action or both. Diabetes mellitus is recognized as an epidemic in the Asian sub-continent affecting nearly more than 50 million in India alone. Diabetes is a disease of complication with decreasing life span for diabetic patients. The diabetic foot is one of the complications of diabetes and the end point is leg amputation that is most devastating for individual with diabetes. The prevalence of diabetes mellitus is growing rapidly world wide. A study conducted by Sarahet.,al (2014) on Global prevalence of Diabetes, shows that the prevalence of diabetes for all age-groups worldwide was estimated to be 2.8% in 2000 and to be 4.4% in 2030. The total number of people with diabetes is projected to rise from 171 million in 2000 to 366 million in 2030. As per the data given by International Diabetes Federation (Position statement-IDF, 2013), 366 million people are diabetics in 2014; by 2030 this will have risen to 552 million. The greatest number of people with diabetes is between 40 to 59 years of age. In 2011, there were 45.2 million cases of type 2 diabetes mellitus in India. Of these, 14.7 million and 30.5 million were found in rural and urban areas, respectively. By the end of 2012,

International Diabetes Federation (IDF) estimates that the total prevalent cases of type 2 diabetes will increase to 47.2 and 69.7 million in rural and urban areas respectively.

Objectives:-

- ❖ To assess the level of diabetic foot ulcer patients among pre test group.
- ❖ To assess the effectiveness of acetic acid soak on diabetic foot ulcer among diabetic patient.
- ❖ To compare the pre test and post test results in effectiveness of healing foot ulcer among diabetic patients.

Hypothesis:-

- **NH1:** There will be no significance reduction of diabetic foot ulcer after applying acetic acid soak among diabetic foot ulcer patient.
- **NH2:** There will be no significance association between diabetic foot ulcer. Intensity and selected demographic variables.

Methodology:-

A pre experimental design one group pre test post test design was adopted for the study. Study participants included diabetic patients above 30 years of age with diabetic foot ulcer. A total of 60 diabetic foot ulcer patient participated. Bates – Jensen wound assessment Scale was used to assess the pre test and post test level of diabetic foot ulcer

Results:-

Pretest:-

Table 1: Pre test level of Diabetic foot ulcer among the diabetic patient.

PRETEST LEVEL OF DIABETIC FOOT ULCER	PRETEST	
	FREQUENCY	PERCENTAGE
	N	%
NORMAL	-	-
MILD	20	33.3
MODERATE	40	66.7
TOTAL	60	100

Table 1 reveals pretest level of diabetic foot ulcer among the diabetic people before implementing acetic acid soak. Among 60 people with diabetic foot ulcer 20 (33.3%) belongs to mild level of diabetic foot ulcer, 40 (66.7%) belongs to moderate level of diabetic foot ulcer.

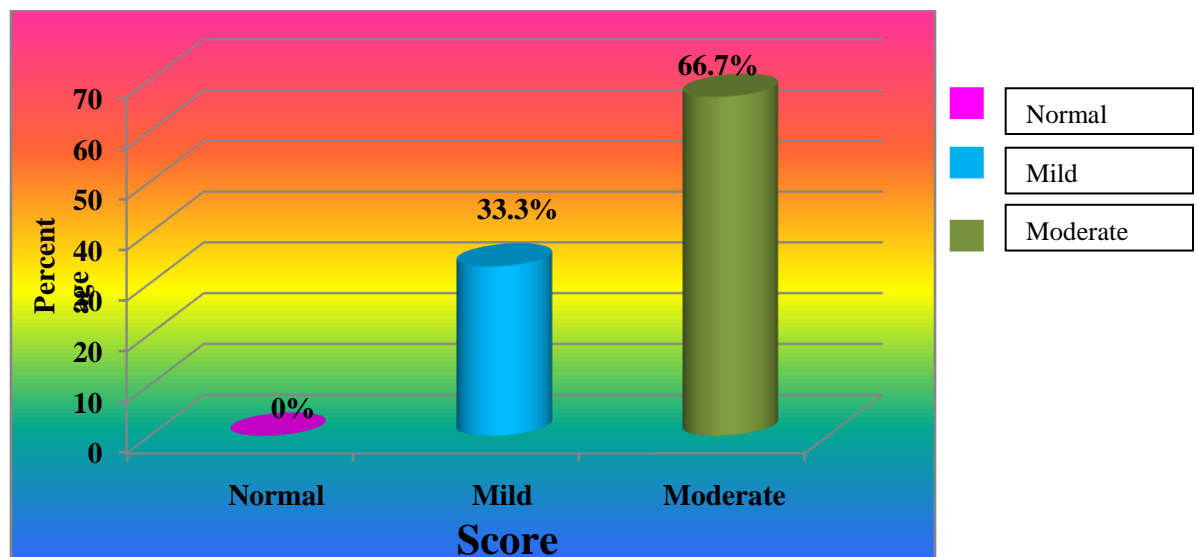
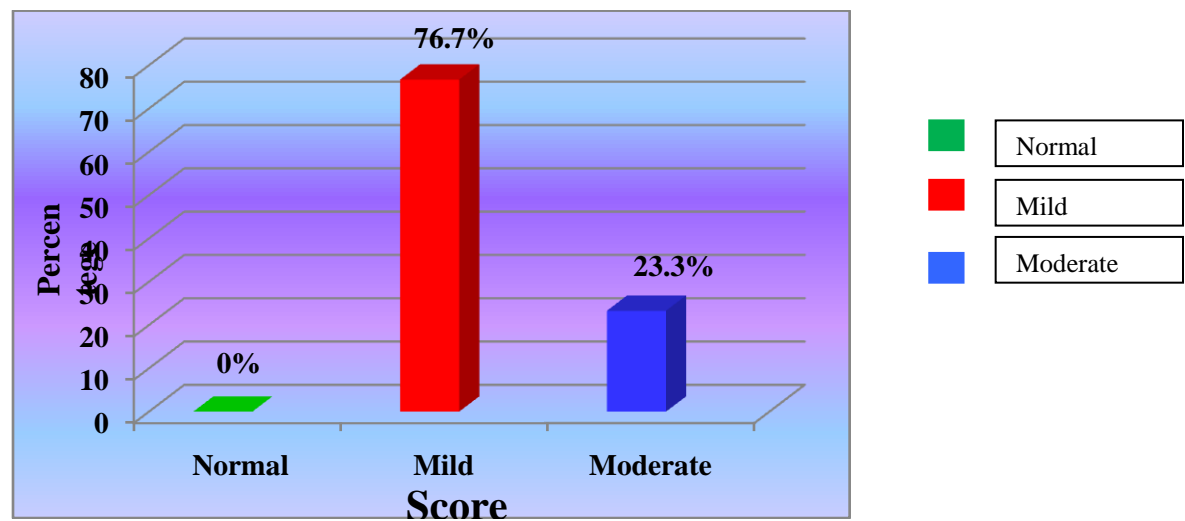


FIGURE 1: Pre Test Level of Diabetic Foot Ulcer among the Diabetic Patient

Post test:-**Table 2: Post test level of Diabetic foot ulcer among the diabetic foot patient****N= 60**

POST TEST LEVEL OF DIABETIC FOOT ULCER	POST TEST	
	FREQUENCY N	PERCENTAGE %
NORMAL	-	-
MILD	46	76.7
MODERATE	14	23.3
TOTAL	60	100

Table 2 reveals post test level of diabetic foot ulcer among the diabetic people after applying acetic acid soak. Among 60 people with diabetic foot ulcer problem 46(76.7%) belongs to mild level of diabetic foot ulcer, 14(23.3%) belongs to moderate level of diabetic foot ulcer.

**FIGURE 1: Post Test Level of Diabetic foot ulcer among the diabetic Patient**

Comparison of effectiveness of acetic acid soak by pre and post test score among diabetic people with diabetic foot ulcer problem:-

Table 3: Comparison of Pre and Post Test Level of Diabetic foot ulcer among diabetic Patient**N=60**

LEVEL OF DIABETIC FOOT ULCER	PRE TEST				POST TEST				't' value
	N	%	MEAN	SD	N	%	MEAN	SD	
NORMAL	0	0	23.3	9.5	0	0	40.7	8.4	7.6*** P<0.001
MILD	20	33.3			46	76.7			
MODERATE	40	66.7			14	23.3			

Table 3 reveals the comparison of effectiveness of acetic acid soak on diabetic foot ulcer problem. Before applying acetic acid soak, out of 60 diabetic people with diabetic foot ulcer 20(33. %) belongs to mild level of diabetic foot ulcer, 40 (66.7%) belongs to moderate level of diabetic foot ulcer. However in post test 46(76.7%) belongs to mild level of diabetic foot ulcer, 14(23.3%) belongs to moderate level of diabetic foot ulcer. Chi square test was formulated by using McNemar test and the paired t value is 7.6** which is statistically significant at $p < 0.001$ and this indicates the effectiveness of acetic acid soak on diabetic foot ulcer problem.

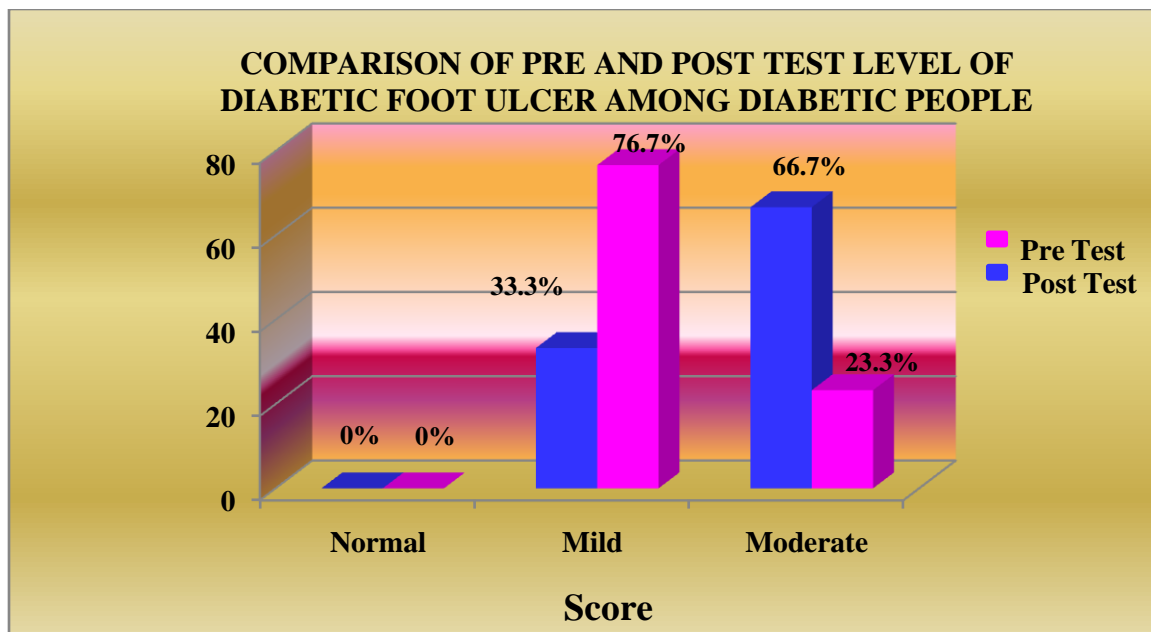


FIGURE 2 Comparison of Pre and Post Test Level of Diabetic foot ulcer among diabetic Patient

Conclusion:-

The study concluded that acetic acid soak improves the level of diabetic foot ulcer of diabetic patient with diabetic problem residing in sree balaji medical college and hospitals. The 't' value was 7.6*** and the difference was found to be statistically significant at $p < 0.001$ level which indicates the effectiveness of acetic acid soak in improving the diabetic foot ulcer. Such acetic acid is beneficial not only for improving the diabetic foot ulcer of diabetic patient but also to improve their quality of life and diabetic foot ulcer problems.

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