



A Quasi Experimental Study to Assess the Outcome of Neem Oil on Pediculosis among Narikuravars at Selected Settings

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Abstract

Background: Pediculosis is the major parasitic infection that affects the Narikuravars community of people from Tamil Nadu, India. The neem tree is native to India and its antiseptic properties are now widely recognized including its unique effect upon the skin. **Objective:** - To assess, determine and associate the outcome of neem oil on pediculosis among Narikuravars. **Materials and Methods:** A quantitative approach with quasi experimental research design was adopted in this study. The study was conducted in Salamanatham village which is 18 kms from Vellore city having the total population of 2,522 people out of 316 belong to narikuravars people with pediculosis at the age group 15-60 years and the Accessible population of the study comprises of 60 narikuravars people with pediculosis within the age group of 15-60 years who are residing in salamanatham Vellore. Non-Probability purposive sampling technique was used to assess the outcome of neem oil on pediculosis among narikuravars. Level of pediculosis was measured by observational checklist devised by the investigator. **Results:** In the experimental group in the post test almost all 30(100%) had mild level of pediculosis where as in control group in the post test 19(63.33%) had mild level of pediculosis 11(36.67%) had moderate level of pediculosis and none of them had severe level of pediculosis Regarding pretest the mean score was 7.33 with S.D 1.18 and in the post test the mean score was 2.77 with S.D 0.68. The calculated value of $t = 19.998$ was found to be statistically highly significant at $p < 0.001$ level. This clearly shows that after the intervention given to the narikuravars, the level of pediculosis was considerably decreased in the post test. **Conclusion:** The study concluded that the application of neem oil has reduced the level of pediculosis among narikuravars. Therefore it can be used as a safe and effective way to reduce the level of pediculosis..

Keywords: Neem Oil, Pediculosis, Narikuravars

I Introduction

The Narikuravars are a community of people from Tamil Nadu, India. The main occupation of the people who originally belong to the indigenous tribes is hunting. But as they were prohibited entry into the forests to pursue their livelihood they were forced to take up other alternatives such as selling beaded ornaments to survive

The major issues which confront narikuravars are poverty, Non-literacy, diseases and discrimination. There has been discrimination of narikuravars since ancient times. Because of these issues, they have less knowledge on personal hygiene and so they are more prone to get pediculosis. Pediculosis is one of the parasitic infections of the hair on the head and it is transmitted by direct contact with infected persons, their clothing, and personal articles. It is also known as lice infestation. The neem tree is native to India. Neem's antiseptic properties are now widely recognized including its unique effect upon the skin. It has been used in its native country and now around the world for treating epidermal conditions being used as a natural remedy for warts, dandruff, psoriasis, eczema, dermatitis, boils, acne, even a natural remedy for moles, cold sores, skin ulcers, athletes foot, and fungal conditions and can be used regularly for skin infection prevention and is also used to help relieve symptoms of sinusitis.

The importance of neem tree has been recognized by natural research council. They published a report in 1992 entitled "Neem" a tree for solving global problems.

The U.S academy of sciences currently attaches very high importance to the neem tree. The invited nations declared neem as the "Tree of the 21st century". Because of its wider variety to application it is commonly called the friend of the Indian villages.

The Vedas called neem 'Sarvaroganivarani' which means one that cures all ailments.

Neem oil is botanical oil, extracted from seeds and kernel of neem tree (*azadirachta indica*), a member of the meliaceae family, a botanical cousin of mahony by crushing. Neem oil or neem seed oil is a brownish yellow color liquid, with smell of garlic .neem oil is slightly soluble in water and have 6.5 to 7.5 pH values. It boils at more than 200 degree Celsius and freeze at 13 degree Celsius.

Reutemann et al., (2008) conducted a study upon neem. The Neem tree has been considered one of the most useful and versatile plants in the world. Neem oil has been used for both homeopathic remedies and as a pesticide. Both systemic and contact reactions have occurred with the use of neem oil. Natural products have been used as traditional medicine for thousands of years and recently have been of increasing interest, since, the costs are usually lower and they are considered less toxic by the public

A descriptive study was conducted by Donnelly (2006) in the Unites States regarding pediculosis prevention and control strategies of community health and school nurses. Traditional treatment of pediculosis involves the direct application of pesticides to the scalp of the infested individuals

Statement of the problem

A Quasi experimental study to assess the outcome of neem oil on pediculosis among narikuravars at selected settings, Vellore

Objectives of the study

To assess, determine and associate the the outcome of neem oil on pediculosis among Narikuravars.

Materials and methods

A quantitative approach with quasi experimental research design was adopted in this study. The study was conducted in Salamanatham village which is 18 kms from Vellore city having the total population of 2,522 people out of 316 belong to narikuravars people with pediculosis at the age group 15-60 years and the Accessible population of the study comprises of 60 narikuravars people with pediculosis within the age group of 15-60 years who are residing in salamanatham Vellore. Sample size consists of 60 who met the inclusion criteria. 30 samples for experimental group and 30 for control group. Non-Probability purposive sampling technique was used to assess the outcome of neem oil on pediculosis among narikuravars. Level of pediculosis was measured by observational checklist devised by the investigator.

The tool used for the data collection had two sections. **Section A** had Demographic Variables which includes Age, gender, occupation, income (per day), marital status, and number of Children, head bath schedule, and source of health information and **Section B** had observational checklist for signs and symptoms of pediculosis devised b y the investigator.

CRITERIA FOR SAMPLE SELECTION

Inclusive Criteria

1. Male and female narikuravars with pediculosis and age group between 15-60 years
2. Narikuravars who were willing to participate in the research.
3. Narikuravars who were able to understand and follow Tamil

Exclusive Criteria

1. Narikuravars who were allergic to Neem Oil
2. Narikuravars who had any injury or problems in the scalp and head

Ethical considerations

The study was conducted after the approval of ethical committee. No harm certificate was obtained from the siddha doctor. Formal permission was obtained from the narikuravars president and narikuravars who fulfilled inclusive criteria. The narikuravars were clearly explained about the study purpose and written consent was obtained. It was assured to the narikuravars that the data will be used only for research purpose and the results will be kept confidential. Anonymities of the study was maintained and explained about the importance of neem oil and rights of withdrawal from the study.

Statistical analysis

Both descriptive and inferential statistics were used. Descriptive Statistics such as Frequency and percentage distribution, Mean and standard deviation, and Inferential Statistics such as Unpaired 't' test, Chi-square test were used for analyzing the data.

III Results

With regard to the age in the experimental group, majority 22(73.33%) were aged between 15 – 30 years, 20(66.67%) were female and almost all 30(100%) had own business. Regarding income per day, majority 25(83.33%) were earning below Rs.150 per day, 22(73.33%) were married, 9(30%) each had one children and no children, 22(73.33%) were taking head bath weekly once and almost all 30(100%) had received information regarding health through mass media.

Considering the gender in the control group group majority 20 (66.67%) of them were female, 10(33.33%) were male and all 30(100%) were doing their own business majority 23(76.66%) were with the income of below Rs. 150 and 20(66.67%) were married, 2(6.66%) had three and above children and 10(33.33%) no children, majority 20(66.67%) used to take hair wash weekly once, and almost all 30(100.00%) had received the information through mass media.

Table 1: Frequency and percentage distribution of pretest level of pediculosis among Narikuravars in experimental group and control group.

n =60

Pre-test level of Pediculosis	Mild (1 – 5)		Moderate (6 – 10)		Severe (11 – 15)	
	No.	%	No.	%	No.	%
Experimental Group	0	0	30	100.0	0	0
Control Group	17	56.67	13	43.33	0	0

Table 2: Frequency and percentage distribution of post test level of pediculosis among narikuravars in experimental and control group

n= 60

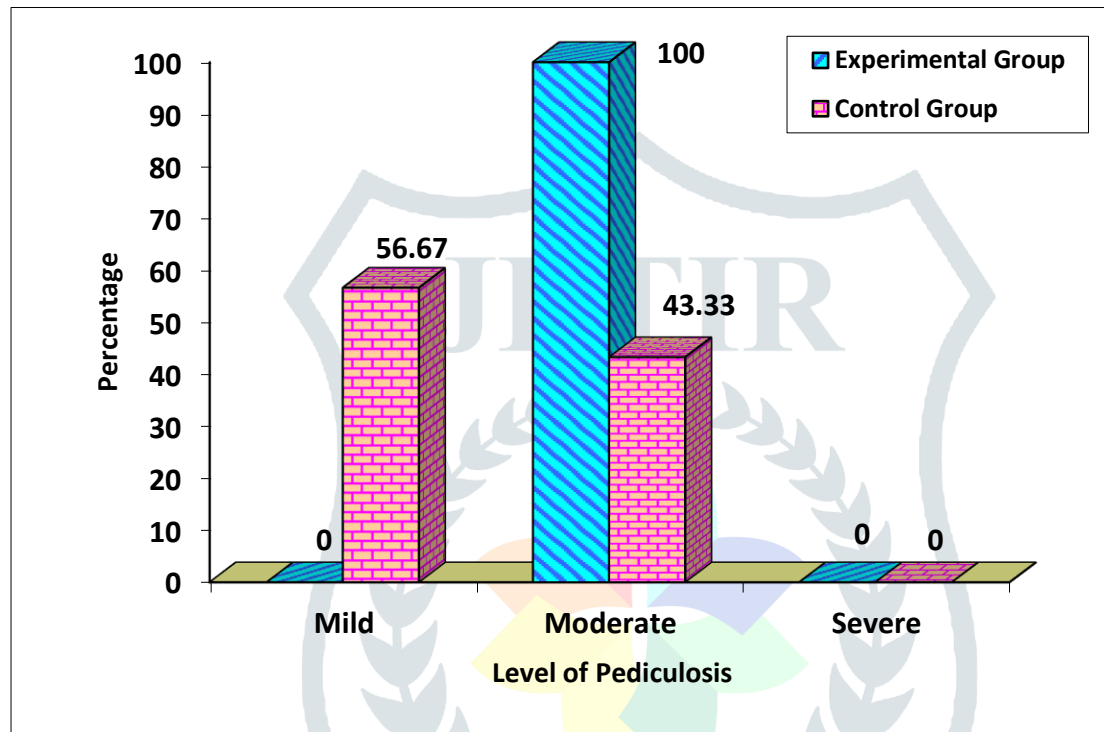
Post-test level of Pediculosis	Mild (1 – 5)		Moderate (6 – 10)		Severe (11 – 15)	
	No.	%	No.	%	No.	%
Experimental Group	30	100.0	0	0	0	0
Control Group	19	63.33	11	36.67	0	0

Table 3: Determine the outcome of neem oil on pediculosis among narikuravars in experimental and control group

n=60

Post test level of Pediculosis	Mean	S.D	Unpaired 't' Value
Experimental Group	2.77	0.68	t = 13.814*** p = 0.000, S
Control Group	5.33	0.76	

***p<0.001, S – Significant

**Figure 1:Percentage distribution of pretest level of pediculosis among narikuravars in experimental and control group**

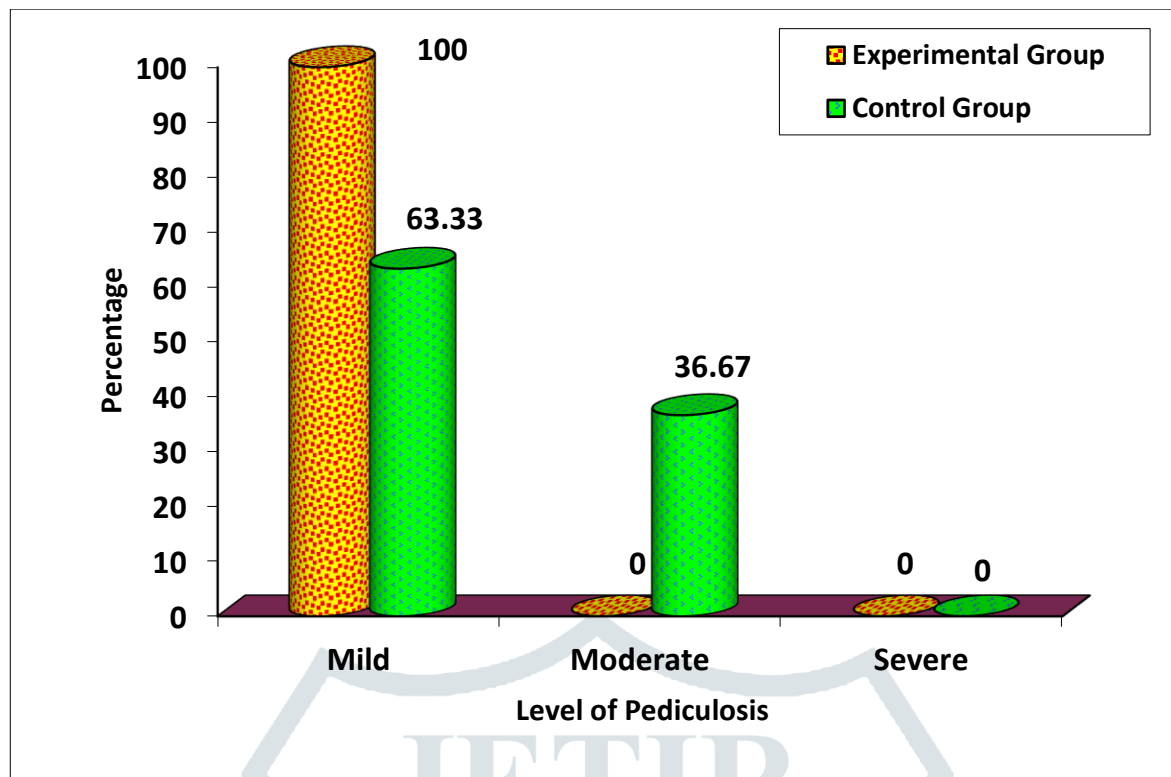


Figure 2: Percentage distribution of post test level of pediculosis among narikuravars in experimental and control group

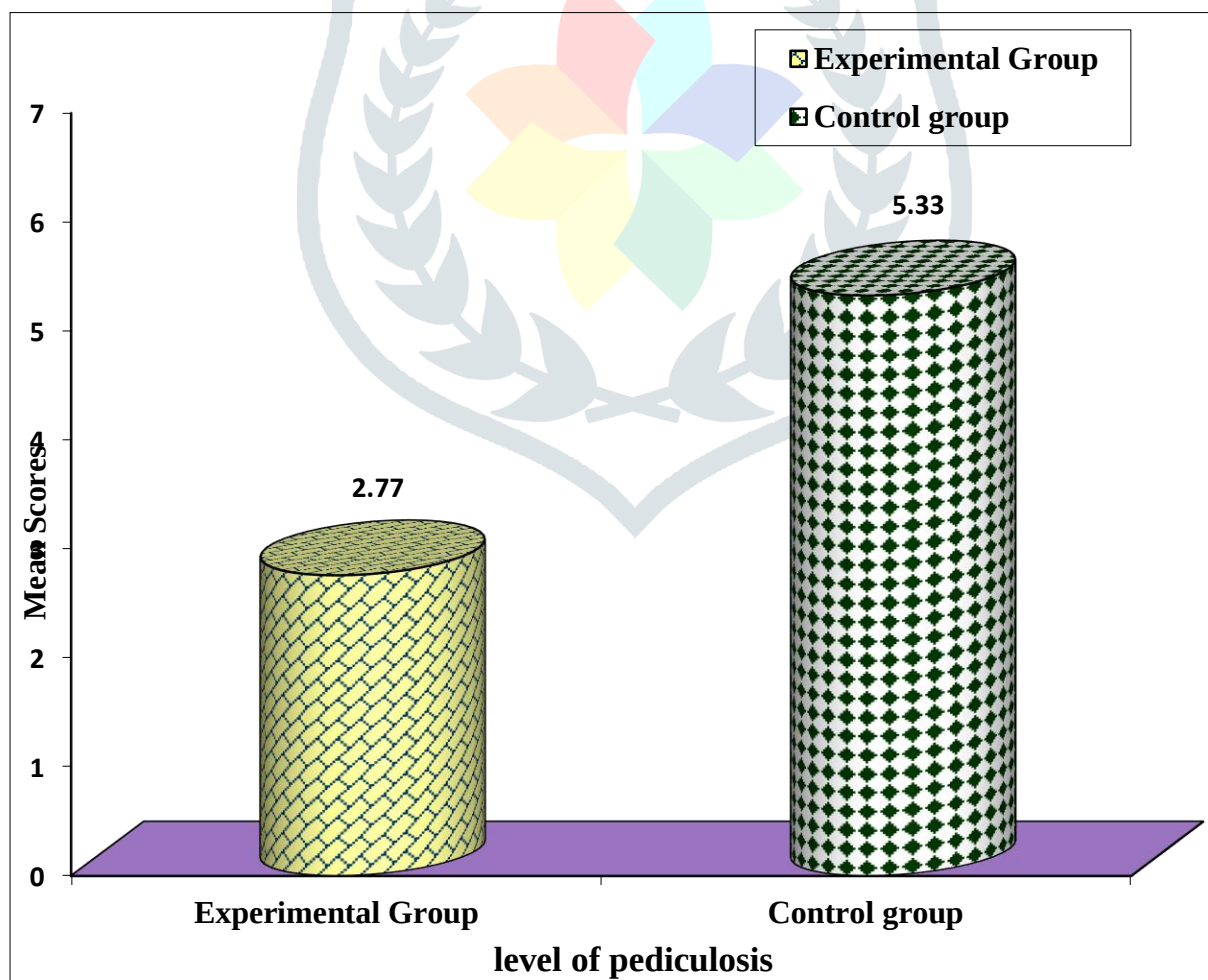


Figure: 3 Outcome of neem oil on pediculosis among narikuravars in experimental and control group

The analysis reveals that the demographic variables gender and head bath schedule has shown statistically significant association with the post test level of pediculosis at $p < 0.01$ and $p < 0.05$ level

respectively. The other demographic variables had not shown any statistical significance with the post test level of pediculosis among narikuravars in the experimental group.

IV Discussion

The experimental group of the pretest mean score was 7.33 with S.D 1.18 and in the post test the mean score was 2.77 with S.D 0.68. The calculated 't' value of $t = 19.998$ was found to be statistically highly significant at $p < 0.001$ level. This clearly shows that after the intervention given to the narikuravars, the level of pediculosis was considerably decreased in the post test. Whereas in control group the pretest mean score was 5.40 with S.D 0.77 and in the post test the mean score was 5.33 with S.D 0.76. The calculated 't' value of $t = 1.000$ was not found to be statistically significant. This clearly shows that the narikuravars in the control group had no significant improvement in their pediculosis level in the post test. Hence the research hypothesis RH_1 stated that there would be a significant difference in the outcome of neem oil on pediculosis among narikuravars in experimental group and control group was accepted. The result of the study clearly indicates that the application of Neem oil has an effect on Pediculosis among Narikuravars in the study group than in the control group.

The study conducted by lincy Isaac(2010) on effectiveness of neem oil upon pediculosis among orphan children and in control group also showed that there was no significant difference in the degree of pediculosis before neem oil application ($M=2.70$, $SD=0.450$) and after neem oil application($M=2.73$, $SD=0.450$). In contrast, in the experimental group, degree of pediculosis was decreased ($M=0.70$, $SD=0.466$) when compared to the degree of pediculosis before neem oil application ($M=2.73$, $SD=0.450$). The difference was found to be statistically significant at $p < 0.001$ degree of pediculosis and it can be attributed to the effectiveness of neem oil application.

The reliability of the tool was done by inter rater reliability method. The Observational checklist was observed by the researcher and other nursing personnel simultaneously and the obtained reliability co-efficient $r = 0.90$ was high and the tool was found to be reliable for the study.

V Conclusion

The study concluded that the Neem oil on pediculosis is effective and also revealed that the tools used were reliable, feasible and appropriate and could be replicated in different settings and with different population.

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VIII Conflict of interest: None declared

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X Contributors

GPVS: Conceptualization of the study, collection, analysis of the data, writing the manuscript, finalized the manuscript and will act as the guarantor of the paper; **DDC:** Conceptualization of the study, analysis of the data, writing the manuscript, finalized the manuscript, edited and critically evaluated the manuscript.