



# INTERNATIONAL JOURNAL OF ADVANCE RESEARCH AND DEVELOPMENT

(Volume2, Issue7)

Available online at [www.ijarnd.com](http://www.ijarnd.com)

## A Study to Assess the Effectiveness of Neem Leaves Powder (*Azadirachta Indica*) on Pediculosis Among School Children at A selected community in Chennai

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### ABSTRACT

*At present head louse infestation or pediculosis is a common problem worldwide, especially among school children. A preventive approach to the maintenance of good health with specific education can be of greater benefit to a person than a delayed reactive one. The aim of the study was to find out whether the Neem leaves powder is effective in prevention and control of pediculosis among school children. The conceptual frame work was developed based on VonLudwig Bertalanffy (1968) system theory. The quasi-experimental one group time series with multiple application was adopted for this study. The study was conducted in the paraniputhur village at Thiruvallur District. By using purposive sampling technique, 30 samples were selected. The duration of the study was three weeks. Pretreatment assessment was done by using observational check list based on signs and symptoms of pediculosis infestation. On the same day, neem leaves powder paste was applied, on the third-day post treatment assessment was done. The treatment was continued for 6 times in the same manner. The same tool was used to assess the degree of pediculosis infestation throughout the study. Data collected was analyzed by using descriptive and inferential statistical methods. The study finding showed that 15(50%) had a mild degree of pediculosis infestation and 15(50%) severe degree of pediculosis infestation before application of neem leaves powder. During 1st and 2nd application it remains the same but after 3rd, 4th, 5th, and 6th application there was a gradual decrease in pediculosis infestation and 30 (100%) had a mild degree of pediculosis infestation. Hence there was a significant difference between pretreatment and post treatment there was no significant association found between the degrees of pediculosis infestation prior treatment with the demographic variables. The study concluded that neem leaves powder is very effective, cheap and not irritant and helps in control and prevention of pediculosis infestation.*

**Keywords:** *Pediculosis, Neem.*

### HEALTH IS NOT ONLY A GREAT BLESSING OF GOD BUT ALSO A VALUABLE TRUST FROM THE ALMIGHTY BACKGROUND

The child is the greatest gift to everyone that you will ever receive. In turn, we must give values and traditional joy in life, self-esteem, unconditional love, skills and secure surroundings and good health to the child. Child's health depends significantly on the parents care which starts from the time of pregnancy and throughout the life. So providing "Good health" is most important on the part of the parenting for their children. The school aged children may be independent in self-care activities related to personal hygiene but may need adult supervision on occasion to see that skin care and oral hygiene is being done completely and correctly. Personal hygiene is very

essential for the upkeep of the health and for the normal growth of our body. There is a proverb which highlights the importance of hygiene i.e. "Cleanliness is next to Godliness". Pediculosis is the infestation of the head. Pediculosis has been a problem and concern throughout history. The sucking lice, order Anoplura, are obligate, blood-sucking ectoparasites of mammals. In general, they have evolved with their mammalian host and consequently, are extremely host specific, rarely infesting even closely related species. The three kinds of lice infesting humans exhibit a set specificity and intimacy: 1) head louse, *Pediculus humanus capital* DeGeer, 2) body louse, *Pediculus humanus* Linnaeus 3) pubic or crab louse, *Phthirus pubis* Linnaeus. All are found worldwide where ever humans exist. The following discussion relates to head lice only. Head lice are limited to the hair of the head, primarily near the nape of the neck and the ears. Their entire life cycle--egg, nymph, and adult--is spent on the host species, usually on the same individual. Those lice that do not transfer directly to a host usually perish within a short time, generally not surviving when off a host for more than a day or two. The head louse is a small, elongate insect 2-3 mm in a length and is usually found grasping the hair shaft near the scalp with its specially adapted claws. The adult female louse may live for a month, laying 150 or more eggs (nits), up to 10 or more a day. The egg or nit (as it is most frequently called) is oval, about 1 mm long, yellowish opalescent in color, and with an operculum (cap) at its distal end. Each nit is firmly cemented at an oblique angle to the hair close to the scalp, where it takes about a week to hatch. The blood-feeding nymph then passes through three instars (stages) in a little more than a week to become an adult. The entire life cycle takes about three weeks. Although the head louse is seldom incriminated as a vector in disease transmission, the injection of saliva during feeding, as well as the deposition of excreta, usually causes pruritis with resultant scratching that can lead to secondary infection. Transmission occurs either directly from contact with an infected person or indirectly by fomites such as shared hair brushes, combs, head gear, scarves, coats, bedding, etc. Because head lice require frequent blood meals and a warm, moist scalp environment, the vast majority remain on their host. Head lice infestation affects millions of people in the world. The National Pediculosis Association estimated that 10 to 12 million children are infested with head lice per year. Children become infested more often than adults and account for the largest percentage of infestations. Head lice have not been shown to transfer disease but they are associated with serious morbidity. Based upon the use of pediculicides the National Pediculosis Association (NPA) of USA, estimates that as many as 12 million individuals are treated annually.

NEEM is depicted in our age-old tradition as the GODDESS "Shakthi". Its botanical name "Azadirachta indica" speaks of its nativity. It has been the herbal policeman of our society and environment since time immemorial. The Neem tree is native to India and is commonly known as "The cure all" tree. Neem has antiseptic properties are widely recognized now. One of the neems stronger advantages is its effect upon the skin in general. It has been most helpful in treating a variety of skin problems and diseases. According to a report from the National Research Council Ad Hoc Panel of the Board on Science and Technology for International Development. Neem preparation from the leaves or oil can be used as a general antiseptic. Neem does not create any side effect. It can be used for extended periods of time and is easy to apply. Neem is safe for humans, animals, birds, and fish, yet deadly to most in sex. Neem has been considered effective medicine for the curative and preventive purpose, has served as an Anti-viral activity, Anti-cancer activity, Anti-bacterial activity, Antihelmenthic activity, Anti-inflammatory, Anti septic, Anti pyretic activity and Anti parasitic activity. *Hakim Syed M.M. Ameen (2006)*.

### **NEED FOR THE STUDY**

A recent study found that 62 percent of school going girls in a 5-14years age group in India are affected, while in Chennai four out of five girls (82 percent) have this head lice problem. Hindu (May 6th, 2007). pediculosis are especially found among school children as hundreds of children remain in close contact during school hours marked by severe itching and scratching of the head. Whenever the louse sucks blood the condition often causes physical, mental & even psychological discomfort. In chronic cases, the child could even suffer from anemia, bad odour and bleeding through excessive scratching. This could, in turn, lead to a low-grade fever and cause secondary infection through boils, besides causing irritation the condition would also affect the child's concentration levels. Head lice once carried the stigma of poverty and unclean conditions, but today, we know that pediculosis can affect anyone – from any economic or social stratum. Generally spread by direct contact. It is important to remember that no commercial remedy on the market today is 100%effective in killing both lice and nits. American Academy of Pediatrics.

It is a common problem which is preventable. Mothers are not aware of the commercially available anti-pediculosis products. Above all, they are not in a position to afford for the same, which ends up having the children neglected and living with pediculosis as part of their life. The investigator wanted to help the children to get away from this common problem by using neem leaves as a home remedy which is not expensive, easily available, has no side effects and safe to administer.

### **SPECIFIC OBJECTIVES**

- To assess the degree of pediculosis infestation before application of neem leaves powder.
- To assess the degree of pediculosis infestation after each application of neem leaves powder.
- To associate the degree of pediculosis infestation prior to treatment among school children with the selected demographic variables.
- To test the hypothesis

### **METHODOLOGY**

The study was conducted in Paraniptur village at Thiruvallur district. It is situated 8kms away from Chennai, covering a population around 2lakh. The population consists of people with different socio-economic and educational backgrounds. Approximately one –fourth of the population were school children in the age group 4 to 15 years, The population consisted of the school children in the age group of 4 to 15 years from the selected community. A quasi-experimental one group (time series with multiple institutions) research design was selected for this study. Totally 30 samples were selected for this study by using purposive sampling technique. The duration of the study was three weeks. Pretreatment assessment was conducted by observation check list and post treatment assessment was conducted after two days of treatment and it was continued the same for about three weeks with an observational check list.

### **FINDINGS**

#### **1. Characteristics of the samples**

Descriptive statistics of the demographic variables shows that 11(37%) of children were in the age group 8-11. 18(60%) family had 4-7 members, 14(47%) children belonged to the economic status between Rs.2001-3000, 17(57%) parents were literate, 14(47%) children had short straight hair and 21(70%) children had washed hair weekly once.

#### **2. The degree of pediculosis infestation:**

The study showed that 15(50%) children had a moderate degree of pediculosis infestation and 15(50%) had a severe degree of pediculosis infestation. The study findings revealed that 30(100%) children had a mild degree of pediculosis infestation. None of them had a moderate or severe degree of pediculosis infestation after six applications.

#### **3. Association of neem leaves powder with demographic variables:**

The present study showed that there was no significant association found between the degree of pediculosis infestation and demographic variables.

#### **4. Testing the hypothesis:**

The study findings indicated that there was a significant difference in the degree of pediculosis infestation after six applications of neem leaves powder.

### **CONCLUSION**

From the study findings, it can be concluded that 30(100%) children had a mild degree of pediculosis infestation after application of neem leaves powder. The effectiveness of neem leaves powder on pediculosis seems to have no significant association with age of the child, the number of the family members socioeconomic status of the family, education of parents, type of hair and hair hygiene. Hence, the present study concluded that the neem leaves powder is one of the natural remedies for prevention and control of pediculosis infestation. The neem is natural, safe, cheap and non-irritant.

### **NURSING IMPLICATIONS**

The implications drawn from the present study are of vital concern to all health care team members including a nurse, practitioners, nurse educators, nurse researchers, community & school health nurse and need to be incorporated into both theory and practice.

### **NURSING SERVICE**

The clinical nurse needs to ensure responsibility in arranging teaching programs for parents about prevention and control of pediculosis infestation among school children.

### **NURSING EDUCATION**

Take initiative and prepare the students to educate the community people regarding a home remedy for prevention and control of pediculosis infestation and the medicinal effect of neem leaves powder.

### **RESEARCH RECOMMENDATIONS**

A structured teaching study can be done by providing guidelines through the booklet on the same topic.

A descriptive study can be done on knowledge of parents regarding prevention & control of pediculosis infestation

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