



Research Article

A SURVEY-BASED EVALUATION OF ANVAYA™ AYURVEDA'S ANTI-LICE HAIR OIL IN CHILDREN RESIDING IN GROUP SETTING: A REAL-WORLD OBSERVATIONAL STUDY

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ABSTRACT

Head lice infestation (*Pediculosis capitis*) is a common parasitic condition among school-going children, particularly in group living environments such as hostels and orphanages. Conventional treatments may be associated with resistance, safety concerns, and poor compliance. A survey was conducted to evaluate the effectiveness and safety, of **Anvaya™ Ayurveda's Anti-lice hair oil** in children for 30 days. This observational study was conducted among children aged 5–15 years of both genders residing in a group setting. Participants with confirmed head lice infestation were administered anti-lice hair oil as per a standard protocol. Data was collected using user feedbacks and visible results observed. Outcomes included observations documented in reduction of lice/nits and itching, ease of use, compliance, decrease in reinfestation rates, and safety. Following intervention, a substantial reduction in lice and nits was reported in the majority of participants. Overall, 90% of participants achieved clinically meaningful improvement, defined as reduction to mild or no infestation. No worsening of infestation severity was observed in any participant. The product demonstrated good acceptability, with most caregivers reporting ease of application and satisfactory compliance. No adverse effects were reported, and reinfestation rates were low during the observation period. Anvaya™ Ayurveda's Anti-lice hair oil demonstrated effectiveness, safety, and high user acceptability in children residing in group settings. These findings support its potential as a practical option for managing head lice infestations in community-based environments.

INTRODUCTION

Head lice infestation (*Pediculosis capitis*) remains a widespread public health concern, particularly among school-going children. The condition is highly contagious and spreads rapidly in crowded environments such as hostels, orphanages, and boarding schools, where close contact facilitates transmission.

Management of head lice infestation presents several challenges. Conventional pediculicides, including permethrin and lindane, have been associated with increasing resistance, potential toxicity, and concerns regarding repeated use in pediatric populations. Additionally, treatment

adherence is often suboptimal due to inconvenience, unpleasant odor, or scalp irritation.^[1]

Alternative approaches such as herbal or oil-based formulations, that act by suffocating lice or disrupting their lifecycle while offering improved safety and tolerability are being explored and adopted.

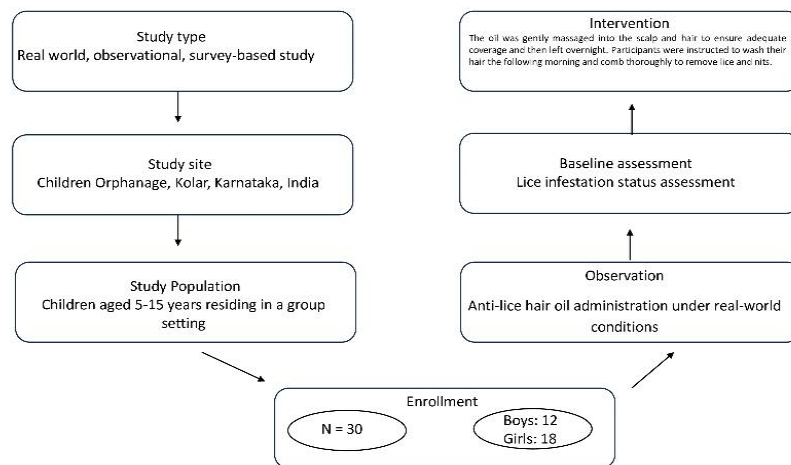
Despite their widespread use, there is limited real-world evidence evaluating the effectiveness and usability of anti-lice oils, in group living settings. Such environments represent a unique challenge due to high transmission rates and the need for practical, scalable interventions.

The present study was therefore designed to assess the effectiveness, safety, and acceptability of Anvaya™ Ayurveda's Anti-lice hair oil (Greenspace) in children residing in group settings using a survey-based observational approach.

MATERIALS AND METHODS^[2,3]

Study design: A real-world, observational, survey-based study in children age 5-15 years.

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**Fig. 1: Flowchart of the Study Design and Anti-Lice Hair Oil Intervention Procedure****Table 1: Inclusion and Exclusion Criteria for Participant Selection**

Inclusion Criteria	Exclusion Criteria
Children with visible head lice infestation (live lice and/or nits)	Presence of severe scalp infections or dermatological conditions.
Residents of group living facility	Known hypersensitivity to components of the hair oil
Consent obtained from institutional authorities.	Use of other anti-lice treatments during the study period

Diagnosis and Intervention

All diagnoses were performed by caretakers at the facility using a designated plastic head lice comb (tooth gap 0.2mm, rigid teeth). The hair was first detangled and divided into four sections. Each section was then combed six times, from the scalp to the hair tips. To avoid biasing the treatment outcome, any head lice captured in the comb were left in the hair.

The severity of infestation was assessed using a four-point scale:

- 0 = no relevant infestation (0–4 lice and/or nymphs)
- 1 = mild (5–9 lice and/or nymphs)
- 2 = moderate (10–24 lice and/or nymphs) and
- 3 = severe (≥ 25 lice and/or nymphs)

Directions and Frequency to Use Anti-lice Hair oil

Participants were treated with anti-lice hair oil according to a standardized application protocol. The

Outcome Measures

oil was gently massaged into the scalp and hair to ensure adequate coverage and then left overnight. Participants were instructed to wash their hair the following morning and comb thoroughly to remove lice and nits. The anti-lice hair oil was applied on alternate days until complete eradication was achieved. For optimal results, participants were advised to apply the oil 4–6 times during the treatment period.

Data Collection

Data were collected using a structured questionnaire administered to caregivers, wardens, or older children. The survey captured information on baseline infestation severity, symptom profile (including itching and discomfort), ease of use and acceptability, compliance with the treatment protocol, perceived effectiveness, and adverse events.

Table 2: Primary and Secondary Outcome Measures

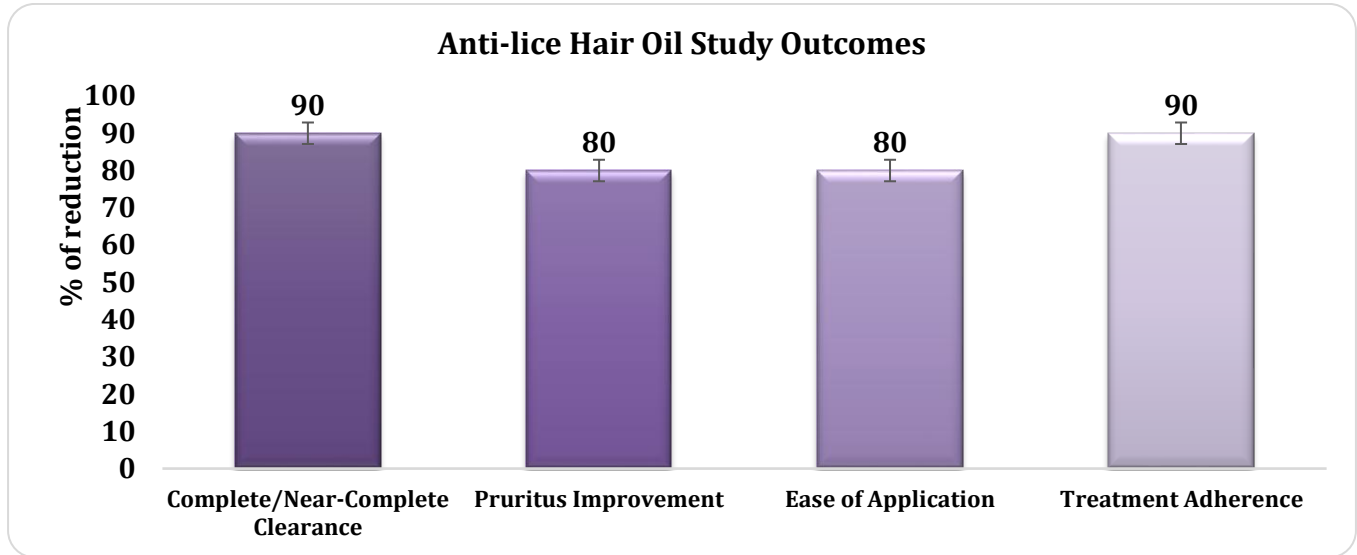
Primary Outcomes	Secondary Outcomes
Reduction in lice and nits	Ease of application, user acceptability (odor, texture, convenience)
Improvement in itching and scalp discomfort	Compliance with treatment
	Safety and tolerability

RESULTS

All 30 participants had confirmed head lice infestation at baseline, with the majority experiencing moderate-to-severe pruritus and scalp discomfort. The prevalence of head lice infestation was higher among girls compared to boys. Following treatment with the anti-lice hair oil, a substantial reduction in live lice and nits was observed across participants, with complete or near-complete clearance achieved in 90% of cases. Improvement

following treatment was observed in both groups, with a particularly notable reduction in infestation among girls. Pruritus improved significantly in 80% of participants.

The intervention was well accepted, with 80% of caregivers reporting ease of application and most indicating satisfactory odor and texture, contributing to high overall acceptability. Treatment adherence was high, with 90% of participants completing the prescribed regimen.



Graph 1: Effect of Anti-lice hair oil post-intervention

No adverse events were reported, indicating good tolerability. Reinfestation occurred in a small proportion of participants during follow-up, suggesting a potential role of the intervention in reducing transmission within group settings.

At baseline, the mean lice count was 17.3 ± 8.4 , with the majority of participants presenting with moderate to severe infestation (Grade 2–3). Specifically, 60% of participants were classified as moderately infested and 23.3% as severely infested, while 13.3% and 3.3% fell into the mild (Grade 1) and no relevant infestation (Grade 0) categories, respectively.

Following treatment with Anti-lice hair oil, a marked reduction in lice burden was observed across the cohort. The mean post-treatment lice count decreased to 4.3 ± 2.9 , corresponding to an average reduction of approximately 75–80% from baseline. A substantial proportion of participants (60%) achieved complete clearance (Grade 0), while an additional 30% were categorized as having mild infestation (Grade 1). Only a small fraction of participants (10%) remained within the moderate to severe categories post-treatment.

Table 3: Baseline and Post-treatment Assessment of Clinical Parameters in Children with Head Lice Infestation

Parameter	Baseline	Post-treatment
Lice count (Mean $\pm$ SD)	17.3 ± 8.4	4.3 ± 2.9
Itching score (Mean $\pm$ SD)	6.8 ± 1.7	2.1 ± 1.2
Scalp discomfort score	5.9 ± 1.8	1.8 ± 1.0

Table 4: Baseline and Post-treatment Assessment of Severity Scores in Children with Head Lice Infestation

Severity grade	Baseline n (%)	Post-treatment n (%)
Grade 0 (No infestation)	1 (3.3%)	18 (60.0%)
Grade 1 (Mild)	4 (13.3%)	9 (30.0%)
Grade 2 (Moderate)	18 (60.0%)	2 (6.7%)
Grade 3 (Severe)	7 (23.3%)	1 (3.3%)

Overall, 90% of participants achieved clinically meaningful improvement, defined as reduction to mild or no infestation (Grade 0–1). No worsening of infestation severity was observed in any participant.

These findings indicate that Anvaya Ayurveda's Anti-lice hair oil is effective in significantly reducing head lice infestation under the conditions of this study.

DISCUSSION

Growing concerns regarding conventional insecticides including their potential adverse effects on human health, environmental persistence, contamination of water and food systems, and the emergence of resistant insect populations have driven the search for safer alternatives. In this context, plant-derived products have gained attention due to their multifaceted bioactivity.

Beyond synthetic insecticides, a few herbal products in the market are known. However, their mechanism of action or evidence to their efficacy and safety in clinical setting is limited.

Many plants produce essential oils as natural defense mechanisms against pests and pathogens, and these oils often exhibit insecticidal, fungicidal, bactericidal, and virucidal properties. Notably, essential oils from the Zingiberaceae family have been explored as alternative agents for managing head lice infestations.^[4]

Essential oil derived from *Eucalyptus globulus* Labill. demonstrates a broad spectrum of biological activity against insects, mites, and microorganisms, making it a cost-effective, eco-friendly candidate for pest control. Such properties support its potential inclusion, alone or in combination with other botanical extracts, in formulations targeting head lice. The essential oils of some *Eucalyptus* species *Eucalyptus globulus* found to be effective against head lice have a high content of 1,8-cineole as the main component.^[5] Similarly, *Azadirachta indica* (neem) contains several bioactive compounds, including azadirachtin,

nimbolides, nimbidin, nimbin, salanin, and gedunin. Among these, azadirachtin, a triterpenoid compound, has demonstrated high efficacy against head lice, with reported effectiveness of up to 90%.^[6]

In addition to these botanical insecticidal effects, certain oils such as olive oil (*Olea europaea*) act through a physical mechanism by coating the spiracles of lice, thereby impairing respiration and reducing mobility. This suffocating effect facilitates mechanical removal during combing. The report of no adverse events further supports the safety profile of the intervention. Additionally, the relatively low reinfestation rates observed suggest that such interventions may be useful in controlling outbreaks in group environments.^[7]

Mechanism of action of Anvaya™ Ayurveda's Anti-lice hair oil is mainly attributed to;^[8,9,10]

- Inhibition of insect growth regulator (IGR's) pathway.
- Disrupting molting of insects by inhibiting the biosynthesis or metabolism of ecdysone, the juvenile molting hormone.
- By working on the nerve cells of the insects through inhibition of GABA receptors.
- Uncoupling mitochondrial oxidative phosphorylation, by inhibiting the respiratory chain of the lice.
- Decreasing intramitochondrial levels of acetyl CoA and acid-soluble CoA esters and reduces the mitochondrial ATP content.

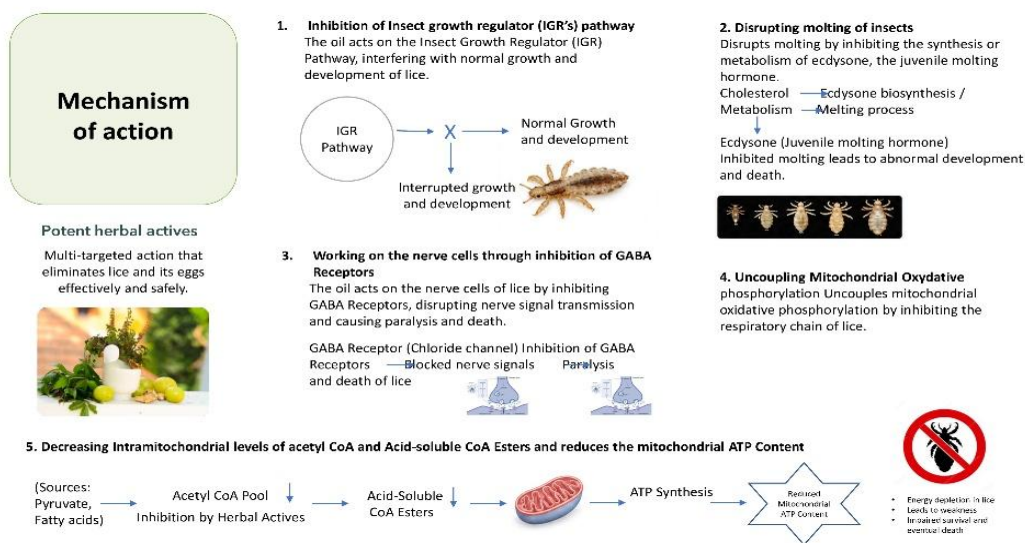


Fig. 2: Mechanism of Action of Anvaya™ Ayurveda's Anti-lice hair oil

CONCLUSION

Anvaya™ Ayurveda's Anti-lice hair oil demonstrated effectiveness in reducing lice infestation and associated symptoms, with good safety and high user acceptability in children residing in group settings. These findings support its use as a practical

intervention for managing pediculosis capitis in community and institutional environments. Further controlled studies are recommended to validate these observations.

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