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Protocol for managing Head Lice among school children

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Abstract:*Incidence and prevalence of head lice is very high among school children in India. As it is a contagious problem, managing it at the very beginning is very essential. Present study focuses on identifying the effectiveness of neem extrats in managing head lice. The neem formulation varies according to the severity of infection. Objective of the study wasto develop a protocol for the management of head lice and to pre - test it for its effectiveness. Evaluative approach was used with pre experimental design.Data were collected from 40 primary school children chosen using non probability convenient samplingat selected areas of Katapady, Udupi district, using Demographic proforma and Screening checklist. Based on the severity, samples were categorized into mild, moderate and severe infestation.Their treatment varied from wet combing for mild cases to neem paste to the moderate cases and neem shampoo for the severely infested cases. Samples were ranging from 6 to 16 years of age. Highest(97.5%) were females and majority (70%) were from semi urban area. It was found that majority 65% had past history of head lice; 57.5% had head lice in other family members and 97.5% had head lice infestation among bench mate / best friend or play mates. During the first observation less than half (47.5%) of the samples had moderate infestation, during second observation 50% had mild infestation.In third observation it was found that 14 samples among 26 were cured of the condition by neem application and only 12 still had mild infestation.The proposed protocol was found very effective for management of head lice.*

Keywords: *Effectiveness, Head lice, Infestation, Neem extracts, Protocol*

I. Introduction

Head lice are tiny, wingless insects that reside within the hair. They also lay eggs at the base of the strand of hair. They are blood sucking parasites and are also very contagious which spread rapidly from person to person. Though head lice infestation is very common among children, it can affect all age groups. Lice infestation is not known to spread any diseases, but they can badly damage the roots of the hair which can result in hair loss in the future. Lice infestation can lead to severe irritation and discomfort and in rare cases leaving this condition untreated can lead to anaemia[1].

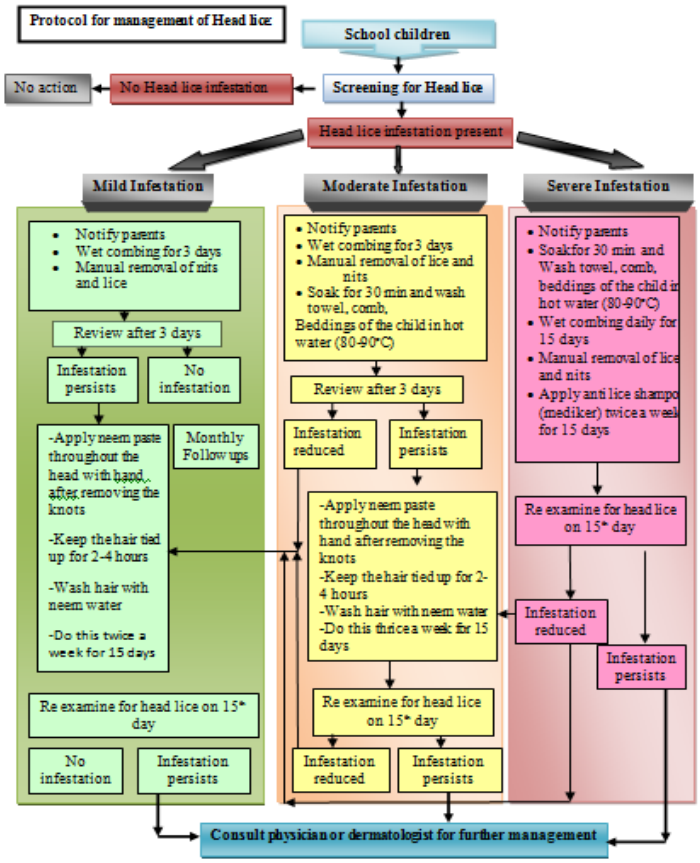
Head lice is a very common problem in school children. A population-based questionnaire survey was conducted to identify the Incidence and prevalence of head lice in a district health authority area of UK. Data was gathered from two hundred and four of 235 primary schools (87%). Overall 438 children had head lice at the time of the survey, giving a prevalence of 2.03%; 8,059 had lice at some time in the past year giving an annual incidence of 37.4%.[2]

Most of the available natural home remedies involve putting something on scalp and hair to 'smother' the head lice. Popular choices include real mayonnaise, olive oil, and vaseline. These are usually left on overnight, often under a shower cap, and then washed out the next day. They can be very messy though and have not really been proven to work. Some experts believe that this method 'works' because we actually remove the nits and lice as we try to get this stuff out of the hair.[3]

This study focused towards the management of head lice among school children using locally available, cost effective method. This provides with guidelines for head lice management which could be used appropriately to manage the head lice without a doctor's help. The researcher prepared a protocol using neem extracts and wet combing and tested it for its effectiveness.

II. Materials And Methods:

Evaluative approach was used with pre experimental design.Data were collected from 40 primary school children chosen using non probability convenient sampling at selected areas of Katapady, Udupi district, using Demographic proforma, Screening checklist for head lice and Structured questionnaire on head lice. Participants were categorized into mild, moderate and severe infestation after checking the scalp with 6 random hair flaps using screening checklist and were provided with proper instructions as per the protocol. Regular follow ups were done based on the category and the prescribed time duration. Scalp examination was done in all the follow ups to know the effectiveness of the neem paste in managing head lice as per the proposed protocol.



2.1 Preparation of neem paste:

Fine neem paste was prepared manually by grinding neem leaves with water. Neem water was prepared by adding neem leaves to boiling water. Approximately 5-6 leaves were added to 1 litre of water.

2.2 Method of Application :

Samples were categorized into mild, moderate and severe infestation after observing the scalp with six random hair flaps using screening checklist. Participants were provided with 4 teaspoons of neem paste and were asked to spread the neem paste all over the hair with hand in the evening after removing the hair knots by combing and they were instructed to put up the hair(if long) and leave it without covering and to wash the hair with neem decoction after 2 - 4 hours of application.

2.3 Storage of the paste:

Neem paste was used for a period of maximum 15 days after preparation when stored in refrigerator. When kept in room temperature it was advised to use for not more than 7 days.

2.4 Frequency of application:

Procedure will be repeated

- *twice a week* for 15 days for clients with *mild infestations.*
- *thrice a week* for 15 days for clients with *moderate infestation*
- Clients with *severe infestation* were provided with *anti lice shampoo* which had to be used twice a week for 15 days and had to continue the above mentioned regimen based on the degree of infestation.

III. Results

Table 1 : Description of sample characteristics (n=40)

Sl no	Demographic characteristic	f	%
1.	**Age in years :**		
	• 6	1	2.5
	• 8	3	7.5
	• 9	7	17.5
	• 10	5	12.5
	• 11	7	17.5
	• 12	7	17.5
	• 13	3	7.5
	• 14	5	12.5
	• 16	2	5
2.	**Gender**		
	• Male	1	2.5
	• Female	39	97.5
3.	**Class studying in**		
	• 1^{st}	1	2.5
	• 3^{rd}	6	15
	• 4^{th}	6	15
	• 5^{th}	9	22.5
	• 6^{th}	7	17.5
	• 7^{th}	3	7.5
	• 8^{th}	5	12.5
	• 10^{th}	3	7.5
4.	**Area or residence**		
	• Urban	7	17.5
	• Semi urban	28	70
	• Rural	5	12.5
5.	**Mother's education**		
	• Illiterate	2	5
	• Primary education	8	20
	• Secondary education	14	35
	• Pre university	10	25
	• Diploma	2	5
	• Graduate	4	10
6.	**Mother's occupation**		
	• Skilled	5	12.5
	• Semi skilled	1	2.5
	• Unskilled	2	5.0
	• Home makers	32	80
7.	**Father's education**		
	• Primary education	6	15
	• Secondary education	12	30
	• Pre university	12	30
	• Diploma	1	2.5
	• Graduate	9	22.5
8.	**Father's occupation**		
	• Expired	1	2.5
	• Skilled	13	32.5
	• Semi skilled	3	7.5
	• Unskilled	13	32.5
9.	**Type of family**		
	• Nuclear	25	62.5
	• Joint	12	30
	• Extended	3	7.5
10.	**Approximate family income per month**		
	• <5000	1	2.5
	• 5001-10000	23	57.5
	• 10001-15000	6	15
	• 15001-20000	8	20
	• 20001-25000	1	2.5
	• 25001-30000	1	2.5
11.	**Do you have past history of Head lice?**		
	• No	14	35
	• Yes	26	65
12.	**Does anybody at your home have Head lice at** present?		
	• No		
	• Yes	17	42.5
		23	57.5

13.	**Does your bench mate / best friend or play mates have Head lice at present?**		
	• No	1	2.5
	• Yes	39	97.5

Table 2 : Effectiveness of protocol in terms of frequency and percentage (n=40)

Degree of infestation	**Observation 1 Pretest n=40**		**Observation 2 (On third day) n=40 After wetcombing**		**Observation 3 (on 15th day) n=26 After neem paste application**		**Observation 4 (refered cases with no improvement) n=11**	
	f	**%**	**f**	**%**	**f**	**%**	**f**	**%**
No infestation	0	0	11	27.5	14	53.84	0	0
Mild infestation	16	40	20	50	12	46.15	0	0
Moderate infestation	19	47.5	9	22.5	0	0	0	0
Severe infestation	5	12.5	0	0	0	0	0	0
Reduction of Mild to no infestation	*	*	11	27.5	14	53.84	0	0
Mild to mild infestation	*	*	5	12.5	5	19.23	0	0
Reduction from Moderate to mild	*	*	12	30	7	26.92	0	0
Moderate to moderate infestation	*	*	7	17.5	0	0	0	0
Reduction from Severe to mild	*	*	3	7.5	0	0	0	0
Reduction from Severe to moderate	*	*	2	5	0	0	0	0
Referred cases							12	30

* = not applicable

Table 2 show that during first observation majority (47.5%) of the samples had moderate infestation, during second observation majority 50% had mild infestation. It show that only 26 samples were left for third observation indicating that 14 were cured with wet combing and manual removal of the head lice. In third observation it was found that 14 samples among 26 were cured of the condition by neem application and 12 still had mild infestation and were referred to dermatologist for further management. It indicates that neem leaves were useful in managing head lice in school children and the proposed protocol was effective.

IV. Conclusion :

Analysis of the data proves that proposed protocol was effective in managing the head lice including nits. The results were good and all the samples had good opinion about this method of head lice management. It was noted that even wet combing itself is a good measure to reduce to head lice The effect was more when it was combined with manual removal and application of neem paste.

Sampling technique was restricted to non probability convenient sampling which limits the scope of generalization of the findings.

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