

## Evaluation of the Effectiveness of a Modified Cellophane (Scotch) Tape Method to Diagnose Enterobiasis in a Selected Paediatric Population in Sri Lanka

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**Background:** Enterobiasis caused by *Enterobius vermicularis* is the commonest worm infection among paediatric population. Though paediatricians manage enterobiasis regularly, the recurrent disease has always been a challenge because of auto-infections and re-treatment with single dose of drug. Hence it is very important to confirm the enterobiasis using a feasible diagnostic method. The commonly used diagnostic method is the scotch tape method. However, developed countries have manufactured user-friendly, risk-free modified scotch tape kits for this purpose. Such kits are not freely available in Sri Lanka due to high cost.

**Objective:** To modify the existing diagnostic method of enterobiasis as a user-friendly diagnostic kit using locally available material

**Methods:** The study population (n=131) consisted of aged 3-6-year-old children at selected four preschools in Matara district. A self-administered questionnaire was used to collect data on the satisfaction assessment of the test kit from guardians of the child who perform the test. Different materials (Branded cello tapes and polythenes) were collected from the local market, and a modified kit was prepared under the supervision of experts. The newly developed test kit was tested with a satisfactory assessment using the study group. Samples were assessed microscopically for *E. vermicularis* eggs, and the positive rate was calculated. A satisfactory score was generated using collected questionnaires.

**Results:** A total of 11 children were positive while 120 children were negative out of 131 anal swabs. Hence positive rate is 8.39 % in above selected 4 preschools. Satisfactory assessment score for the collection of samples using that kit was 11.9, satisfactory assessment score for test protocol was 12.87, satisfactory score for the appearance of test kit was 10 and satisfactory score for transportation of test kit was 1.77. This score can be improved increasing the sample size. Because of the corona pandemic, poor responses of the guardians and time limitations sample size was reduced.

**Conclusions:** This test kit can be used to diagnose the true state of enterobiasis because the modified scotch tape can collect *E. vermicularis* eggs successfully. Further studies need to be taken to compare with conventional test method.

**Keywords:** Enterobiasis, *Enterobius vermicularis*, Scotch tape method, Test kit