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Effectiveness of Training for Teachers in Early Identification of Skin Disorders Among Primary School Attending Children - A Quasi-Experimental Study Protocol

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ABSTRACT

Skin diseases are the leading cause of morbidity in children. As children spend most of their time in schools, training teachers on the detection of skin changes and timely referral will prevent or reduce the complications. Hence, we propose a quasi-experimental study to evaluate the effectiveness of training for teachers in the early identification of skin disorders among primary school children in a rural area of southern India. The teachers of government and government-aided schools in the field practice area of Model Rural Health Research Unit, Tirunelveli, will be the intervention group. The same schools in the nearby village will be the control group. The investigators and the National Institute of Epidemiology, ICMR, Chennai will develop and validate the training manual. Using the manual, the principal investigator will train the teachers on identifying and referring skin changes and provide a training manual, model register and referral slip to each teacher. The investigators will review the schools quarterly and collect the number of children identified and referred from both groups before and after the intervention. Thus, the trained teachers will be a resource to achieve the objectives of the school health program, complementing the health services.

Keywords: skin diseases, screening, referral, training module, school children

BACKGROUND

According to school-based surveys conducted in India, the prevalence of skin disorders among school children ranges from 8.7 % to 35 %.[1-8] Children with skin problems may experience discomfort, embarrassment, and unwanted school absences, leading to a loss of confidence, disruption of social connections, a sense of stigmatization, and substantial changes in lifestyle.[8] Therefore, it is necessary to educate parents, teachers, and even school children about skin disorders and the need for early identification.[1,9]

Population-based dermato-epidemiological data are essential for the development of public health policies for the control of skin disorders. Epidemiological research on skin disorders among school children is rare.[1,10,11] A school survey is a time-saving and efficient method for screening many students at a term.[1,8,12]

Rashtriya Bal Swasthya Karyakram (RBSK), an initiative by the Government of India (GOI), envisages child health screening and early intervention services.[13] Currently, only RBSK doctors with undergraduate qualifications conduct school health screenings. Due to the lack of dermatologists, there is a paucity of information on the specific nature and causes of skin diseases. In addition, not all children referred for dermatology consultations reach the tertiary centre. In India, especially in rural communities,

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the availability of qualified healthcare personnel is limited. It is essential to use task-shifting strategies to extend the reach of health services. Studies have documented the potential role of simple, yet effective health education offered by school teachers through liaison with patients in reducing endemic illnesses.[14-17] Also, the cooperation between teachers and parents in preventing common skin diseases.[14] As children spend most of their time in schools, training teachers on the detection of skin changes and timely referral will prevent or reduce the complications. If a suitable model of care by an intervention of training school teachers can be developed and its effectiveness is proven, the intervention can be scaled up and replicated especially if it can be built into the existing school health system like RBSK. Hence, we propose a quasi-experimental study to evaluate the effectiveness of training for teachers in the early identification of skin disorders among primary school attending children in a rural area of southern India.

MATERIALS AND METHODS

Study setting: Department of Health Research, Government of India, has established one of the Model Rural Health Research Unit (MRHRU) at Kallur in Tirunelveli District, South India. This unit is linked to Tirunelveli Medical College (TVMC), Tirunelveli and is mentored by the National Institute of Epidemiology (ICMR-NIE), Chennai.

Study design: A Quasi-Experimental Study will be conducted over one-year period. The intervention area will be the Government (n=22) and Government aided primary schools (n=8) at the Model Rural Health Research Unit (MRHRU) field practice area, Tirunelveli. The same number of similar schools of nearby villages other than the intervention area will be the control. (Figure 1)

Eligibility criteria: All government and government-aided primary school teachers, including principals or headmasters in the intervention group (n=98), willing to participate will be included. All children of the same schools with parental consent will be included. We exclude the administrative staff and the teachers on transfer or on leave for three months or more for any reasons.

Ethical considerations: Ethical and administrative approvals were obtained from the Institutional Ethics Committee and District Chief Educational Officer & Deputy Director of Health Services, Tirunelveli district. Informed written consent will be obtained from the teachers and the parents. As the children are vulnerable, the study permits timely referrals.

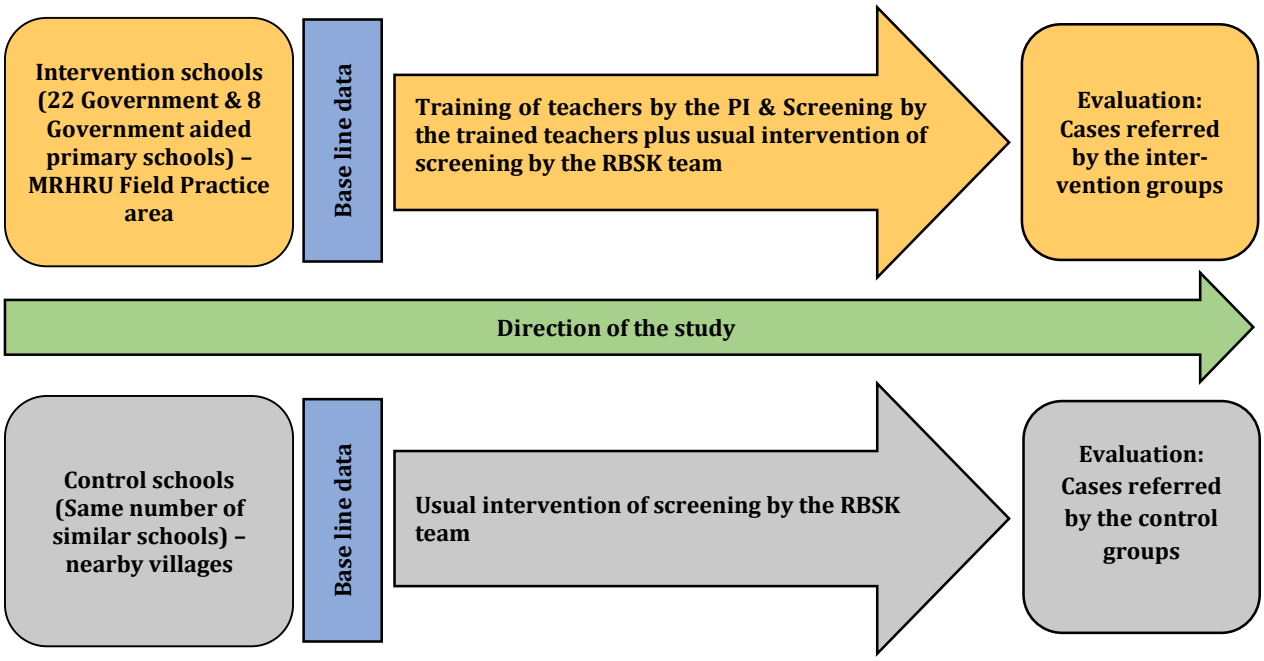


Figure 1: Study plan

Study plan: The study will be conducted in three phases as follows (Figure 2). The investigators shall collect the baseline data from the RBSK and PHC referral records at TVMCH and school health records for the previous year. The data includes the basic details of students, number of skin disorders referred and documented in District Early Intervention Centre (DEIC) and skin department records pertaining to the study areas.

The preparatory phase:

Initially, we considered using a PowerPoint presentation alone to educate teachers on skin disorders and direct them to refer cases. The idea of creating a comprehensive training manual on skin diseases for teachers emerged later to make future references simple and reduce referral mistakes. The manual covers childhood skin diseases such as common com-

municable, noncommunicable diseases and skin emergencies, mode of spread, dos and don'ts, methods of early identification & referral and maintenance of health records. We will categorise the skin disorders in a simplified order. We will include identification pictures for easy recognition of the condition and salient points in the manual for each condition. Post-training guidelines on when and where to refer in simple terms under ten headings like itchy skin, colour changes, lumps and bumps, birth marks etc will be added. The manual will be prepared in the vernacular language, Tamil. Model and referral registers will be prepared for prompt referral & follow-up, and documentation. The preliminary draft will be peer-reviewed at Tirunelveli Medical College, revised after piloting in a nearby primary school and validated by the National Institute of Epidemiology, ICMR, Chennai. A training kit for each teacher includes a comprehensive training manual for teachers on skin disorders, pre & post training questionnaire, model register (Figure 3), referral register (Figure 4) containing referral slips for referral of cases to Primary Health Centres (PHCs) or Dermatology department of Tirunelveli Medical College Hospital. (TVMC) (Figure 5)

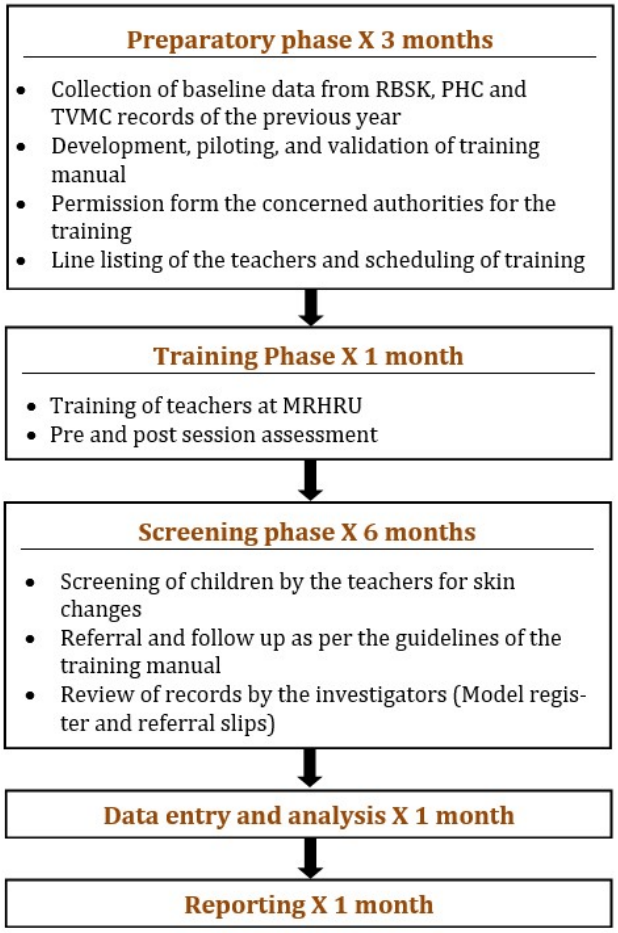


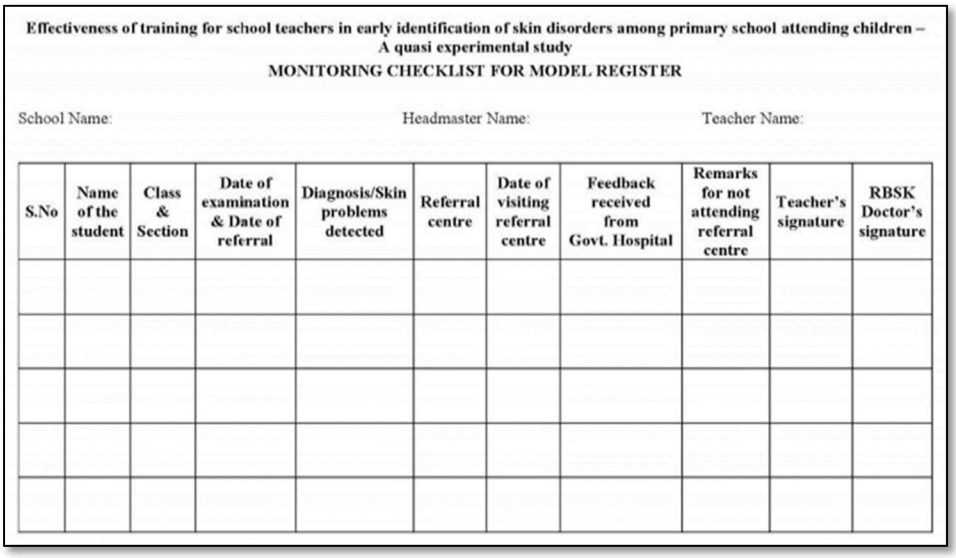
Figure 2: Workplan

Training phase:

We will prepare the line list of the teachers and schedule the training sessions as per their availability. The teachers will be communicated through proper channel and written informed consent will be obtained before the training. The principal investigator will conduct a one-day interactive training session for the schoolteachers of the intervention group using an audio-visual Power Point presentation. In addition, activities such as constructed case scenarios of the maintenance of the model register and referral slip to the appropriate health unit will be conducted to facilitate the learning. Pre- and post-session questionnaires with feedbacks will be collected to assess the teachers' knowledge on skin disorders and the same imparted by the intervention respectively.

SCREENING PHASE

Following the training, the teachers in the intervention group will screen the children monthly for skin changes and refer them as per the guidelines given for referral in the training manual, over six months, by appropriate entries in the model registers and referral slips.



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MONITORING CHECKLIST FOR MODEL REGISTER

School Name: Headmaster Name: Teacher Name:

S.No	Name of the student	Class & Section	Date of examination & Date of referral	Diagnosis/Skin problems detected	Referral centre	Date of visiting referral centre	Feedback received from Govt. Hospital	Remarks for not attending referral centre	Teacher's signature	RBSK Doctor's signature

Figure 3: Model register

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REFERRAL SLIP FROM SCHOOL

Name: Age/Sex: Date:
School Name: Class Teacher Name:
Address:
Mobile No: Teacher: Student's parent/Caretaker:

Place of Referral : PHC ☐
TVMC ☐

- Itchy skin ☐
- Colour change on skin ☐
- Lumps & Bumps ☐
- Numbness of hands and feet ☐
- Deformity ☐
- Lice on hair ☐
- Pustules /Ulcers of skin ☐
- Birth mark/Birth disorder ☐
- Skin emergency (Swelling of lips or eyes) ☐
- Other Skin problems ☐

Feedback form from referral hospital

Name of the hospital with location:
Name: Age/Sex: Class/Section:
School Name:
Date of Visit:
Diagnosis:
Treatment:
Whether follow up required: Yes/No
If yes, advised dated of follow up:

Figure 4: Referral slip

DATA COLLECTION FORM

NUMBER OF SKIN CASES REFERRED

REFERRAL	PRETRAINING	1ST MONTH	2ND MONTH	3RD MONTH	4TH MONTH	5TH MONTH	6TH MONTH
KALLOOR PHC							
CONTROL PHC							

TOTAL NUMBER OF REFERRALS

REFERRAL	PRETRAINING	1ST MONTH	2ND MONTH	3RD MONTH	4TH MONTH	5TH MONTH	6TH MONTH
KALLOOR PHC							
CONTROL PHC							

No of skin cases referred	PHC	TVMCH		Others (Private practioners /hospital
		Via DEIC	Directly to Skin DEPT	
Pretraining				
1st month				
2nd month				
3rd month				
4th month				
5th month				
6th month				
Emergency skin cases referred				
Presurvey				
1st month				
2ndmonth				
3rd month				
4thmonth				
5th month				
6th month				

Figure 5: Data collection form

The principal investigator shall ensure quality assurance by periodical visits to schools and random checking of students as per sub-sampling procedure. The principal investigator will randomly check 5 % of the students screened per school and the respective personnel will be retrained in case of any mismatch in the screening. Quarterly, the principal investigator will review the records and collect the following parameters, over six months period, in the pre-designed proforma such as number of students suspected to have skin diseases, referred for treatment to PHC and TVMC, number of skin emergencies diagnosed at school level and referred after first aid, any time delay between screening, referral and reporting to skin department, TVMC (directly with referral slip or through DEIC) or PHC, reverse reporting and follow-up, feedback details and students' absenteeism. Also, retraining of teachers as per needs at the first visit will be done and also feedback will be collected from the teachers regarding the practical difficulties in screening and referral. For the control area, the details of children referred for skin diseases by the RBSK team will be collected for the equivalent period.

DATA MANAGEMENT

Two independent trained data entry operators will do data entry in Microsoft Excel spread sheet. SPSS version 18.0 will be utilised for data analysis. Descriptive statistics will be summarised as frequencies, percentages, mean and standard deviation. Unpaired student t-test will be applied to test the significance of the number of children with skin diseases detected and referred by the control and intervention groups.

IMPLICATIONS

Early detection of skin disorders, particularly infections, can prevent local breakouts or even epidemics. Similarly, Genodermatoses can be identified early and preventive care instituted to avoid sequelae and complications as these are multisystemic and skin signs act as cutaneous markers. Learning issues and school absenteeism related to skin disorders can also be addressed early. Thus improve their quality of life.

There are few studies regarding the teacher's role in the visual screening of school children. However, this study is the first of its kind reported in Dermatology. Success in the early detection and management of skin disorders involving primary school teachers can be up-scaled to implementation at all primary care levels that can strengthen the RBSK services.

REFERENCES

1. AU S, Badiger S, Nanjesh Kumar S. Pattern of common skin conditions among school children in an urban area of a district in coastal Karnataka: A cross-sectional study. Int J Community Med Public Heal. 2017;4(8):2901.
2. Kohli M, Tomar BS, Bilwal R. Prevalence and demographic profile of skin disorders in school-going children of urban and rural Jaipur. 2019;
3. Villa LK, Krishna G. Epidemiology and prevalence of dermatological diseases among schoolchildren of Medak district, Telangana-a clinical survey. Int J Med Sci Public Heal. 2016;5(7):1475–8.
4. Valia RA, Pandey SS, Kaur P, Singh G. Prevalence of skin diseases in Varanasi school children. Indian J Dermatol Venereol Leprol. 1991;57:141.
5. Libu GK, Bina T, Raphael L, Balakrishnan ShE, George B, Samson JF, et al. Prevalence and Socio-Demographic Determinants of Skin Disease among Lower Primary School Children in Calicut, Kerala. Kerala Med J. 2011;4(3):80–4.
6. Patel JK, Vyas AP, Berman B, Vierra M. Incidence of childhood dermatosis in India. Skinmed. 2010;8(3):136–42.
7. Kumar V, Garg BR, Baruah MC. Prevalence of dermatological diseases in school children in a semi-urban area in Pondicherry. Ind J Dermatol Venereol Leprol. 1988;54:300–2.
8. Jose G, Vellaisamy SG, Govindarajan N, Gopalan K. Prevalence of common dermatoses in school children of rural areas of Salem; a region of South India. Indian J Paediatr Dermatology. 2017;18(3):202.
9. Sidoti E, Bonura F, Paolini G, Tringali G. A survey on knowledge and perceptions regarding head lice on a sample of teachers and students in primary schools of north and south of Italy. J Prev Med Hyg. 2009;50(3).
10. Dogra S, Kumar B. Epidemiology of skin diseases in school children: a study from northern India. Pediatr Dermatol. 2003;20(6):470–3.
11. Bhatia V. Extent and pattern of paediatric dermatoses in rural areas of central India. Indian J Dermatol Venereol Leprol. 1997;63(1):22–5.
12. Tulsyan SH, Chaudhary S, Mishra D. A school survey of dermatological disorders and associated socio-economic factors in Lucknow; a region of north India. Egypt Dermatol Online J. 2012;8(2):4.
13. Ministry of Health & Family welfare G of I. Operational Guidelines Setting up district early intervention center, Catch them young: Intervene Early. 2014.
14. Paredes SS, Estrada R, Alarcon H, Chavez G, Romero M, Hay R. Can school teachers improve the management and prevention of skin disease? A pilot study based on head louse infestations in Guerrero, Mexico. Int J Dermatol. 1997;36(11):826–30.
15. Sampanthar V, Rattigan C, Fraser J, Aston R. Head louse and other common infections in schools: head teachers' use of an information pack. J Fam Health Care. 2002;12(3):76–9.
16. Castanon RE, Andersson N, Hay R. Community Dermatology and the Management of Skin Diseases in Developing Countries. Trop Doct [Internet]. 1992 Jan 1;22(1_suppl):3–6. Available from: https://doi.org/10.1177/00494755920220S102
17. Hay R, Andersson N, Estrada R. Mexico: community dermatology in Guerrero. Lancet. 1991;337(8746):906–7.