

An intervention study to strengthen first aid care in schools of Chandigarh, India

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Citation

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Abstract

Background: School is an important institution for imparting child health. School health services are commonly neglected due to lack of awareness and education about common ailments and first aid care. Objectives: 1. To develop first aid health kit having appropriate drugs and equipment in the schools. 2. To strengthen the school health services by involving teachers and training them to take appropriate action during school hours. Study design

: Cross sectional interventional study. Setting: 100 Govt. schools in Chandigarh, a Union Territory of India. Participants: 90839 children enrolled in those schools. Results: study reveals that only 6 % of schools had health care/first aid kits in pre-intervention phase which increased to 87% in post intervention. Basic health equipment in schools also increased variably post interventionally. It was noticed that 65% of schools were having facility for referring sick children to Govt. health centers and 16% to private clinics. 65% of teacher incharge, health and medicine were not sure of taking appropriate action or decision initially which subsequently decreased to nil in post intervention. Availability of common drugs like paracetamol increased from 16% in pre-intervention to 71.7% later on. Knowledge of teachers about common drugs used in various ailments like fever increased from 71% to 86.9% . Conclusions : Sensitization of school administrators, educators and explaining the relevance of school health resulted in significant improvement and preparation of health kit and strengthening of school health services.

INTRODUCTION

More than half of the world population is below the age of 25 years, 29% are between 10 and 25 years of age, of which 80% live in developing countries. Due to technological advancement and health promotion activities, children who in the past would have died in infancy are surviving into childhood, adolescence and adulthood. Due to limited resources in developing countries, it is important to utilize all available cost-effective resources to improve the health care¹. Schoolteachers are best resource for implementation of school health programmes.

However, the growing age of the school children is an important phase of life. Diseases like anaemia and other nutritional deficiencies, refractive errors, diarrhoea, pneumonia, worm infestation, dental caries, malaria, injuries are common health problems of school children in developing countries. Many children present as an emergency in the form of pain abdomen, high grade fever, bodyaches, vomiting, toothache, bleeding etc. in the school hours. In developing countries like India, due to lack of training of teachers on health, paucity of funds, ill developed

referral and transport, such situations are not adequately handled though these ailments need immediate attention. Health programmes have been successfully implemented in schools by training the teachers^{2,3}. Therefore, a study was conducted in Union Territory of Chandigarh, India with the objective of developing health kit having appropriate drugs & equipment and strengthen the school health services by involving teachers and training them to take appropriate action in the school hours.

MATERIAL & METHODS

Union Territory of Chandigarh is located at 250 Kms from national capital in the north India. This city beautiful, having a population of about 0.9 million with an area of 114 sq km, is one of the most literate states/UT's in India and recent nationwide census of 2001 reported it at 81.7%. City is a well known educational centre and students from the neighboring states stay in the city for pursuing education. City has the highest per capita income in the country and has a strong infrastructure. The health facilities in the city are considered among best in the country, which includes 5 specialist hospitals, 44 civil dispensaries/health centers and

2110 beds, besides a large number of private clinics and hospitals.

Sampling technique: The City has 185 recognized schools both in Government (104) and private sector (81), in addition to large number of preparatory, kinder-garden and other schools. Distribution of these 185 schools according to the level of education is: Primary-46, Middle-34, High-56 and Senior Secondary-49. It was proposed in the study plan that only Govt. schools will be covered in the programme as there is paucity of health facilities in them. Therefore, all 104 Govt. schools were visited to collect the baseline information. However, four schools did not participate and were therefore, excluded from the study. Further, it was decided that after the intervention, about half of the schools which were enrolled in the base-line sample will be revisited after a month to assess the improvement in the school health services, if any.

Collection of data and information: In order to maintain uniformity, a pre-designed Performa was developed to collect the required information. The Performa was divided into four parts. Part-I included general information on school, First Aid & health kit, equipments, availability of medical facilities near school. Part-II included information on referral services for the school children who fall sick. Part-III dealt with the assessment of medical problems in children in terms of medical problems encountered by the teachers, medical checkup sessions held and maintenance of the records. Part-IV covered knowledge of teachers about common health problems and their potential to handle them and also assess their knowledge about common drugs.

The resident doctors, medical officers, medical social workers from Department of Community Medicine, Govt. Medical College, Chandigarh were imparted training on conducting the interview with the teachers, assessing first aid and health kit and filling up the performa. Consultants from the department supervised the visits of the health team in the schools. On arriving at the school, the team contacted the principal/head of the school and explained the purpose of the visit and the written permission and consent was sought. One teacher (medical teacher incharge) who is generally associated with medical care of the school children was contacted after being nominated by the head of the school. The medical teachers were interviewed on different aspects. The health kit along with the drugs, equipments and records were checked on the spot. About 2 hours were spent with one teacher and therefore, 2 schools were covered in a day.

Training of the Teachers: On the basis of the information collected in relation to the common medical problems and drugs required in the schools, a list of medical problems and drugs was prepared which was considered at the time of developing the health kit. Subsequently, a manual was prepared in simple English language which covered recognition of the disease, action to be taken by the teachers and methods to prevent them. One day training for Government school teachers was organised by Department of Community Medicine at Govt. Medical College. Policy makers were also involved to the training programme. The participating teachers were distributed a specially-designed copy of manual, free of cost. Teachers were encouraged to prepare the first aid / health kit with appropriate drugs and procure common equipments for medical check-up of school children and develop referral system and maintain records.

Post -intervention Assessment: After one month of the training, an evaluation of the schools was done again in nearly half of the schools in order to make spot assessment of improvement made in first aid boxes, development of the health kits, inclusion of recommended drugs, knowledge of teachers etc. In order to maintain uniformity, the same trained team from department contacted the trained teachers and collected the information.

RESULTS

The study was conducted in Chandigarh having a population of about 0.9 million with 104 government schools. The programme covered 100 govt schools - 29 in rural, 63 in urban and 8 in slum areas. According to level of schooling, the study included 28 senior secondary schools (upto class 12), 26 high schools (upto class 10), 14 middle schools (upto class 8) and 22 primary schools (upto class 5). Among 100 schools in the study, 67 and 33 were non-model and model schools (have better facilities, higher fee structure), respectively and 90839 children were enrolled in these schools (nearly 10% of the total population of Chandigarh) of which 51.7% were boys and 48.3% were girls. More boys were enrolled in all categories of schools. Further, 71.2%, 20.1% and 8.3% children were in urban, rural and slum areas, respectively. It was observed in the study that maximum number of teachers having being assigned the responsibility of school health care were from the language stream (23%) followed by science (14%), social science (8%), physical education (9%) and mathematics (5%). whereas 41% were teaching multiple subjects in the schools, mainly in primary level schools.

{image:1}

Table 1 reveals that only 62% of the schools were having first-aid / health kits. However, after intervention it increased significantly to the level of 87% ($p < 0.01$). In pre-intervention study, it was observed that 90.9% of the model schools were having kits in comparison to only 47.7% of the non-model schools. Though, after the intervention the increase was not significant in model schools, but it rose to a significant level of 83.9% in non-model school ($p < 0.001$). Over half (58%) of the teachers reported to have given some drug daily followed by 35.4% every week and infrequently by 6.4%. These drugs were being procured mostly from the market (58%) or by utilizing health fund of the school (11.2%) or some support from the govt. dispensary/ hospital (4.8%) or donors (25.8%). Only 10% of the heads of the schools informed that some health funds were available for buying medicines and more so in the secondary schools (21.4%).

{image:2}

As shown in table 2, availability of some of the equipments / tools improved following discussion with heads of the schools and subsequently training the teachers to use them and explaining the benefits. The improvement recorded in some of the basic equipments was: weighing machine from 54% to 65.2%, measuring tape from 36% to 47.8%, eye check up chart (Snellen's chart) from 28% to 34.8%, thermometer from 16% to 60.9%, blood pressure apparatus from 5% to 23.9% and torch from nil to 47.8%.

{image:3}

{image:4}

It was noticed that 64% of the schools were having the facility of referring the sick children to govt. health centre, 16% to private clinics and 3% to both within a distance of 1 kilometer of the school. On interviewing the teachers it was observed that in case of a child falling sick in the school, measures taken by the school authorities were - 4% advised rest in the school, 13% informed the parents, 16% referred to doctor and 2% were send home. But 65% were not sure of taking appropriate decision. However, after training the teachers, they were better prepared to take decision. Arrangement of transport for referring the sick child improved significantly from 73% to 89.1%; availability of referral cards/slips increased drastically from 4% to 82.6%. However, no improvement could be seen in availability of contact number of the doctor or "ready list" of telephone

numbers of the parents of the children with the health teacher (table 3). More medical records were being maintained (from 34% to 60.8%), health check-ups of the children in schools increased from 61% to 80.4% and discussion on health topics in the schools increased from 49% to 54.3% (table 4).

{image:5}

The common medical problems reported by the teachers were pain abdomen 77%, injuries 50%, fever 41%, giddiness 22%, vomiting 17%, worm infestation 11%, fits 10%, weakness 10%, ear / eye problems, 9% dental pain 6%, dysmenorrhoea 3%, insect bite 2% and bodyaches 1%. In this study availability of the drugs in the kits were recorded by checking the box. Besides, allopathic drugs, a large number of ayurvedic/ indigenous drugs were also present. The availability of paracetamol increased from 16% to 71.7%, antibiotics 25% to 41.2%, anti-allergic tablets 13% to 45.6%, anti-helmenthic 3% to 34.8%, anti-emetic from 5% to 43.5%, anti-septic ointment 22 to 82.6%, multivitamins 14% to 26.1%, ORS from 2% to 43.5% and eye drops from 12% to 30.4%. However, teachers were discouraged to use certain drugs (table 5).

{image:6}

The teachers were imparted training to recognize the symptoms of the common diseases / ailment, understand cause / mode of spread, and undertake necessary preventive and other management action. The diseases covered diarrhoea, pneumonia, anaemia, pyoderma, refractive errors, nutrition, worm infestation, fever, injuries, insect bites, and immunization of childhood. The knowledge of teachers to use appropriate drugs for ailments / diseases requiring immediate attention improved drastically i.e. fever from 71% to 86.9%, bodyaches from 61% to 89.5%, headache from 61% to 69.5%, diarrhoea from 51% to 65.2%, injury from 46% to 76.1%, insect bites from 20% to 47.8%, pain abdomen from 41% to 63% dysmenorrhoea 25% to 36.9%, vomiting from 35% to 60.8%, falls from 9% to 28.3%. Other ailment and drug usage also recorded similar trends (table 6). The teachers were provided the list of common ailments and the appropriate drugs to be given in proper dosages keeping in mind the side-effects of them. It was also ensured that teachers will inform parents/ doctors for further action.

DISCUSSION

School health services are an integral component of the comprehensive health care which is included in the concept

of primary health care. Union territory of Chandigarh is a modern city of India and its beauty and excellent opportunities resulted in a rapid growth rate leading to unplanned creation of slums to the tune of one-third of the population being in the slums. Though the health and educational infrastructure are among the best in the country, but the unplanned growth and immigration from poor states continue to put burden of diseases like malnutrition, diarrhoea, ARI, pyodermas etc which are still highly prevalent.

Govt. schools in Chandigarh are either model or non-model. Model schools have better facilities in comparison to non-models which charge nominal fees. More enrollment of boys in schools of Chandigarh as observed in the study which is in accordance with the sex ratio in general population. A large number of people migrated to city for jobs or daily earnings had left behind their families in the native villages and besides the social problem of gender bias widely existent in India. Only 8.3% of the study group of slums was enrolled in the schools and only 8% of the schools were available in these areas which further strengthens the fact that creation of schools have not kept pace with the growth of the slums. Health and educational facilities are poorly developed in the underprivileged areas.

It was significant to note that physical education teachers undergo some training about health care during their study course but strangely only 9% of them were assigned the responsibility of medical and health care in the schools in Chandigarh. Language teachers were involved the most thus, reflecting the improper planning and less priority being given to health care of the children in the schools.

The present study revealed that health/ first aid kits were available in 62% of the schools and majority schools were using them daily. Due to lack of funds and awareness and knowledge regarding procurement of drugs, the health kits were poorly maintained and were of poor quality with many drugs beyond expiry date. Majority of kits were having indigenous drugs because teachers were of the view that these drugs do not have side-effects. Use of allopathic drugs by them was very low as they were not sure of dosage schedule, non-availability and the selection of right drug. With limited health funds the school authorities were buying drugs from the market or were making personal effort. Similarly common tools and equipments for health check-ups were lying unused in many schools. However, following interaction and informing the utility, more drugs and equipment were made available. Commonly used drugs must

be made available in the school health clinics so that they can be provided to sick children at the earliest. Lot of interest was shown by teachers and heads of the school to do something for developing health clinic in the schools. Drugs like paracetamol. Anti-allergic, anti-emetic, anti-spasmodic, anti-septic ointments must be made essential for the health kits to take care of emergency conditions in the school hours. Drugs like antibiotics, anti-helmenthic, ORS, eye-drops etc. are required to control various infections among the school children. The study observed that these drugs were available in a few places and were not being replaced. Teachers were not confident to use them due to lack of knowledge. However, after training of the teachers on disease recognition and appropriate decision to be taken not only the availability improved but also the knowledge of teachers to use them enhanced.

Pain abdomen, injuries, fever, headaches and giddiness, vomiting, worm infestation, eye problems, dysmenorrhoea were some of the problems mentioned by the teachers which they encountered in the schools. Intestinal helminths among school children were reported in 82% in Southern India⁴ and recurrent abdominal pain among urban school children in Malaysia⁵ Govt. of India launched a nationwide campaign against anaemia, worm infestation, dental caries, refractive errors etc. in mid-nineties in the schools but it was onetime effort. Dental caries in neighboring state was reported as 39.4%⁶, Ocular morbidity (mainly Trachoma and Vitamin A deficiency) was highly prevalent (40%) in Delhi⁷. Dysmenorrhoea in rural girls of Delhi was reported in 70.8%⁸. Some of these common problems were also reported by the teachers in the current study. Different studies in the country confirm that the findings of problem / ailments described in the present study by the teachers exist in almost all parts of the India and developing countries.

WHO has advocated the capacity building measures and strategies which may include pre-service and in-service training for teachers, training follow-up support and infrastructure development to plan, implement, monitor and evaluate school health programme¹. In USA, school teachers were successfully trained to manage health emergencies in the schools², school eye health care programme was implemented by orienting and supervising teachers in India⁹, screening of children for refractive errors was reported to be cost-effective strategy³. Malaria diagnosis and treatment by teachers after training and under supervision was implemented in Tanzania¹⁰. There is need to have proper intersectoral co-ordination as stressed by WHO¹ In India

though intersectoral coordination is considered important, it is not well organized as there is a poor interaction between educators and health staff¹¹. Thus, by involving teachers and educators, training and interacting with, it is possible to strengthen school health services. Sensitization of school administrators, educators and explaining the relevance of school health resulted in significant improvement and preparation of health kit and strengthening of school health services in Chandigarh, India. However, there is need to maintain such gains achieved in the schools on regular basis.

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