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RESEARCH ARTICLE

ARE SCHOOLS AND TEACHERS PREPARED TO RESPOND TO HEALTH EMERGENCIES IN CHILDREN? A QUESTIONNAIRE STUDY IN MANGALORE, INDIA

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Abstract

Objective: To evaluate the preparedness of the schools and teachers to respond to medical and dental emergencies in children. **Materials & method**: A questionnaire was administered to teachers and heads of schools. **Results**: About 92% of them reported that they were not confident in dealing with the situation. None of the schools had a written protocol for emergency management. **Conclusion**: This study shows that teachers as well as schools are not prepared to deal with health emergencies.

Introduction

Teachers in schools have a responsibility to ensure that students gain the knowledge and skills they require to become effective learners and ultimately effective and responsible citizens and understand and appreciate the values and beliefs. It is important that every school and teacher actively participate in the protection, safety and welfare of students, thus helping to create the foundation for an effective learning environment. An average school aged child spends 28% of the day and 14% of his or her annual hours in school[1]. During school hours, in addition to minor injuries; children might experience health emergencies in the form of status asthmaticus, diabetic crises, status epilepticus, cardiac crisis, tooth avulsion, fractures of teeth or jaw and so on.[2,3] Schools need to be ready to identify these medical and dental emergencies and should have a protocol in place to handle any untoward incidences. The objective of the present study was to evaluate the preparedness of the schools and teachers in Mangalore, India to respond to medical and dental emergencies in children.

MATERIALS AND METHOD

A self - administered questionnaire comprising of 9 items was administered to teachers and a 7 item interview schedule was administered to the heads of the school. Demographic details regarding age, sex, years of teaching experience and total hours spent in school were also obtained.

A total of 22 primary schools with 1000 teachers were selected by random sampling and questionnaires were distributed to the teachers, with a response rate of 75%. The interview schedules were answered by all heads of the 22 schools. Data was analyzed using the statistical package for social sciences (SPSS) version 11.

RESULTS

A total of 750 teachers and 22 schools took part in the study. Among the teachers, 300 were male, 450 were female, 75% of them belonged to the 30-40 year age group and the average teaching experience was 13 $\pm$ 3 years.

Preparedness of teachers:

It was astonishing to know that almost 90% of the teachers had not received any formal training in the management of health emergencies. (Fig 1)

We found that 89% of the teachers could not identify symptoms of head injury and dehydration. With respect to allergies, although about 80% of the teachers knew that children may be allergic to certain food items and insect bites, very few of them knew that smelling flowers (40%) and sweeping floors (23%) could also cause allergy in children. **(Table 1)**

Regarding awareness about contact sports related injuries, only 2% of the teachers knew that being unable to bite his/her upper and lower teeth properly after trauma might be a sign of jaw fracture whereas only 15% of the teachers knew that a tooth should be stored in milk or water before being re-implanted back into the socket. The study also showed that in spite of 67% of the teachers reporting encountering medical or dental emergencies in their teaching experience, 92% of them reported that they were not confident in dealing with the situation. **(Table 1)**

Preparedness of Schools:

When we conducted interviews of the heads of the schools, we found that although all schools maintained medical records pertaining to immunization / illness of children, only 22% of the schools reported maintaining records of the emergency events at school. None of the schools recommended any specific precaution during contact sports such as helmets or mouth guards, but 90% of the heads of the schools reported that they advocated safe playground and class rooms. All the schools reported that in the event of any medical or dental emergency, the child would be taken to hospital and the parents informed. Almost half of the schools which participated in our study reported to have a full fledged hospital within a radius of 5 kms, but none of the schools had a written protocol for emergency management nor a pre identified doctor on call in case of an emergency. **(Table 2)**

TABLE 1: PREPAREDNESS OF TEACHERS IN HANDLING HEALTH EMERGENCIES

Item	Right answer	Wrong answer
If a child falls while on a balancing bar and is conscious but is not able to move his/her head, the child is probably suffering from...	83 (11%)	667 (89%)
If a child is made to stand out in the hot sun for long periods and he / she collapses, the child is probably….	82 (11%)	668 (89%)
Can you please tick the actions to which you feel a child may develop allergic reaction…..	83 (11%)	667 (89%)
During contact sports if a permanent tooth falls out due to injury, the action to be taken immediately….	113 (15%)	637 (85%)
Following playground injury to the face, if the child is not able to bite his/her upper and lower teeth properly, it means that….	15 (2%)	735 (98%)
Are you confident in handling medical / dental emergencies in a child	60 (8%)	690 (92%)
Have you encountered any medical / dental emergencies in your teaching experience	503 (67%)	247(33%)

TABLE 2: PREPAREDNESS OF SCHOOLS IN HANDLING HEALTH EMERGENCIES

Item	Yes	No
Schools which make note of children with medical illness	22 (100%)	0
Schools which maintain records of medical / dental emergencies during school hours	5 (23%)	17(77%)
Schools which advocate safe play ground and class rooms	20 (91%)	2 (9%)
Schools where parents are informed following medical / dental emergencies during school hours	22 (100%)	0
Schools where there are written protocols to handle medical / dental emergencies	0	22 (100%)
Schools which have pre-identified a doctor on call in case of medical / dental emergencies	0	22 (100%)
Schools which have a well - equipped hospital within 5 Kms from school	12 (55%)	10 (45%)

DISCUSSION

It is estimated that 10% to 25% of injuries to children occur while they are in school[2]. Pediatric emergencies such as the exacerbation of medical conditions, behavioral crises, and accidental/intentional injuries are therefore likely to occur more often during school hours.[2,3] In addition, the increase in the number of children with special health care needs and chronic medical conditions can present with a gamut of emergencies that may require special equipment, preparation and training of personnel, medications and supplies, and/or transport decisions and arrangements[3]. It is thus the responsibility of the school to provide safety and first aid in the school premises.

The American academy of Paediatrics and the American Heart Association have published guidelines for emergency medical care in schools stressing the need for school teachers to establish emergency response plans to deal with life threatening emergencies in school[1]. Despite its critical importance, school emergency preparedness is frequently inadequate in Indian schools because of non existence of proper guidelines for management of such emergencies coupled with barriers such as lack of physical facility, staffing, education and training, and inadequate financial resources[4].

This study was carried out to evaluate the level at which the schools and the teachers of Mangalore city are ready to respond to medical and dental emergencies in children. It is very necessary for the schools to provide education and training to teachers in identifying and managing emergencies in school. The training also need to be reinforced at regular intervals. Sapien et al[5] demonstrated improvement in school teachers' confidence level in recognizing respiratory distress in asthmatic children and knowledge of asthma medications after attending educational sessions consisting of video footage and didactic teaching. In the present study we found that majority of the teachers were not able to identify common injuries that a child may face in school. Children tend to play continuously in sunlight forgetting to drink water and this may lead to severe dehydration. Teachers need to know and understand to provide drinking water and identify symptoms of dehydration. It is important that teachers recognize the symptoms, provide first aid and identify the need to hospitalize the child as and when needed.

In our study, only 23% of the teachers could correctly identify all the causes for allergy. Teachers need to be trained in identifying cases of allergy and its prevention. From the dental health point of view, avulsion of tooth following injury is very common, and many teachers were not aware that the avulsed permanent tooth could be placed back in the socket. Fracture of the jaws or any other bones needs stabilization through first aid. Education seems to be the need of the hour, when it comes to medical and dental emergency management in schools. Teachers need to be trained to identify health emergencies like allergic reactions, chocking, fractures and asthamatic attacks.

According to Sapien and Allen[1], 67% of the schools in New Mexico report emergencies yearly and Knight et al[7] reported that injuries account for a majority of school-based emergency calls. Olympia and Wan[6] reported that four of the six most commonly reported school emergencies were related to trauma (extremity sprain, extremity fracture, head/neck injury, laceration), whereas shortness of breath and seizures were the most common medical complaints.

In the present study many teachers had encountered dental emergencies in schools and although the schools have a system of recording health related issues, the documentation of the actual event and follow up is absent. In the

present study all the schools were concerned about play ground and class room safety but they did not have a written plan for management of emergencies nor did they recommend mouth guards and helmets.
According to the study by Olympia et al[8] in Pennsylvania, seventy percent of schools had a Written Emergency Plan (WEP), but almost 36% of them do not practice the plan.
Since athletic trainers or physical educators are present during all athletic events, they can be made the one point contact for such emergency management in schools. Children with special health care needs need special attention with regards to prevention and management of emergencies.

CONCLUSION

The results of the study shows that teachers as well as schools are not prepared to deal with health emergencies arising during school hours. Presence of children with special needs in schools necessitates the need for specific protocol and ready resources to handle emergencies. It is time that the National Council for Teacher Education (NCTE, India) take up the issue and provide training to teachers in identification and management of medical and dental emergencies as well as issue guidelines and make it mandatory for all the schools to have an written emergency management protocol and to strictly follow them.

RECOMMENDATIONS

- Identify the existing medical problems in children and obtain more information about their condition.
- Adequate record keeping.
- Develop written emergency management protocol and a point of contact in school.
- Regular training of the teachers in identification and management of medical and dental emergencies.

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