Research Article

Status of school health services in government and private schools: A community-based cross-sectional study from North India

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ABSTRACT

Background: School health services (SHSs) are a key constituent for health promotion among schoolchildren. School plays a very important role in SHS, as they apart from creating the health awareness, carry out morning health inspection of the students and periodic medical examination. Improved knowledge of teachers about the SHS will serve as a catalyst for advocating essential health facilities in schools. **Objective:** To assess the status of SHS in government and private schools in North India. **Materials and Methods:** This community-based cross-sectional study includes 50 randomly selected government and private schools by probability proportional to size, which were functional for more than 5 years. A pre-tested semi-structured schedule was used to assess the SHS. A pre-tested structured self-administered questionnaire was given to one school-teachers of each sampled school to assess their knowledge regarding the school health. Percentage, proportion, and $\chi 2$ test were used as statistical methods. $P < 0.05$ was considered statistically significant. **Results:** Medical examination at admission was conducted in 2% of schools and daily morning inspection was conducted in 96% of schools. About 26% of schools never conducted the periodic medical examination of the students. First aid kit was available in 96% of schools. Teachers were designated for school health in 32% of schools while trained teachers were available in 22% of schools only. About 40% of school-teachers had a knowledge score of ≥50%. A majority of the schools were not maintaining the health records of the students. **Conclusion:** Many schools were lacking in providing essential components of SHSs to the students. Therefore, it is a high time to overcome these deficiencies.

KEY WORDS: School; Health; Children; Teachers; India

INTRODUCTION

Globally, one in six of the world's population is adolescents aged 10–19 years. Most are healthy, but there are still substantial premature death, illness, and injury among adolescents. Illnesses can hinder their ability to grow and develop to their full potential. Diarrhea and lower respiratory tract infections are estimated to be among the top 10 causes of death for 10–19 year olds, an estimated 2.1 million adolescents were living with HIV in 2016, interpersonal violence is the third leading cause of death in adolescents. Globally, nearly one in three adolescent girls aged 15–19 years (84 million) has been a victim of emotional, physical, and/or sexual violence perpetrated by their husband or partner. Depression is one of the leading causes of illness and disability among adolescents, and suicide is the second leading cause of death in adolescents, unintentional injuries are the leading cause of death and disability among adolescents.[1] An estimated 6.2 million children under age 15 died in 2018, mostly from preventable causes.[2]

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Over 2.3 billion school-age children spend one-third of their time in schools. Schools, therefore, constitute a unique setting

to help children and adolescents to develop a positive outlook on life and help them establish healthy lifestyles. Global mortality and morbidity estimates in children and adolescents suggest that school-aged children have significant needs for health promotion, prevention, and health-care services. For many school-age children, school health services (SHSs) are the first and the most accessible point of contact with health services, with a potential to regularly reach most school-age children with preventive, curative, and supportive health interventions[3] but school-age children have not received as much attention as the under 5 children.[4]

SHSs are one of the key constituents for health promotion among schoolchildren.[5] The beginning of SHS in India dates back to 1909, when for the 1st time, medical examination of schoolchildren was carried out in Baroda city, but it was missing in priorities that even after 37 years, the Bhore Committee (1946) reported that it was practically non-existent in India or was in an underdeveloped state.[6] Since 2002, school health policies and strategies aimed at preventive health education, specifically health of pupils and providing regular health checkups, have become a national priority. Although the National Rural Health Mission launched the intersectoral school health program in 1996–1997, only a few states implemented the scheme.[7] It includes health appraisal which consists of periodic medical examinations, treatment of minor ailments and availability of first aid box, health education and promotion, and maintenance of school health record.[5] It is a joint mechanism in which some facilities are provided by the teacher under the guidance of health care workers.[8] One of the reasons for absenteeism among schoolchildren and, to some extent, low enrolment in schools is their low health status and sickness. Every third child has some sign of ill health.[9] The goals of the well-child examination in school-aged children are promoting health, detecting disease, and counseling to prevent injury and future health problems.[10] In India, the reported morbidity was observed by a study among school-age children included malnutrition (10.0–98.0%), dental ailments (4.0–70.0%), worm infestation (2.0–30.0%), skin diseases (5.0–10.0%), eye diseases (4.0–8.0%), and anemia (4.0–15.0%).[11] A targeted intervention could have been provided to these children for a better future. It is easy to look after the health of the schoolchildren and delivery of different components of health care because they are all together in one place. Children and youth can receive correct instruction from qualified teachers instead of relying only on information obtained from unreliable sources. Hence, trained teachers can easily put across correct and healthy habits.[9] Simple teachings like hand hygiene have shown to reduce the incidence diarrhea by more than 50% among children, thus raising an urgent need of developing a model for health promotion at schools, that is, replicable, sustainable, and can be modified to the local needs as well.[12] However, recent studies[8,13-16] have shown that teachers had inadequate knowledge of SHS and improved knowledge of teachers about the SHS will serve as a catalyst for advocating for essential facilities in schools.[17] SHSs are of utmost important for schoolchildren, but according to studies,[18-20] schools lack these services. As per the available literature, there is a scarcity of data on the status of adherence to the guidelines about SHS in the schools of district Sonepat, Haryana. Hence, the present study was carried out with objective to assess the status of SHS in schools of a district in Haryana so that appropriate intervention can be suggested.

MATERIALS AND METHODS

Study Setting and Design

This community-based cross-sectional study was carried out in a period of 2 years starting from June 2018 in the department of community medicine, of a rural medical college of a northern state of India.

Sample Size

Using Cochrane formulae, taking prevalence of the adequate environmental and sanitary condition in the previous study[21] 50% at 95% CI and 15% permissible error, the sample size obtained was ≈ 50. One schoolteacher from each sampled school was included in this study to assess their knowledge component.

Sampling Technique

A multistaged random sampling technique using probability proportional to size (PPS) was adopted for the present study. First, one district was selected randomly. After that, two education blocks were selected using simple random sampling from the sampled district. Finally, 50 schools were selected from the sampled educational blocks by PPS. The study sample included 19 government and 31 private schools in proportion to their total number in the study area.

Inclusions and Exclusion Criteria

It comprises schools located in the district Sonepat, Haryana, which were functional for more than 5 years and granted permission for the study. Schools which were shutdown/non-functional and primary schools were excluded.

Study Tools and Data Management

The data were collected on SHSs of schools with the help of a pre-tested semi-structured schedule prepared by following SHSs guidelines.[9] Data on medical examination at admission, periodic medical examination, daily morning examination, record maintenance of health services, availability of first aid kit to students, availability of designated teachers for SHSs, and training status of designated schoolteachers were collected using the study tool. A list of designated or involved in school health obtained from the head of the schools.

A pre-tested structured self-administered questionnaire was given to one randomly selected schoolteacher of each sampled school to assess the knowledge regarding the SHSs. Collected data were entered into Microsoft Excel version 2019, coding and tabulation was done.

Statistical Analysis

Percentage and proportion were calculated for qualitative data. Chi-square test was used for the categorical variable. SPSS software was used for statistical analyses. $P < 0.05$ was considered statistically significant.

Ethical Consideration

The approval of the Institutional Ethics Committee of BPS Government Medical College for Women, Khanpur Kalan, was obtained before conducting the study. Permission to conduct this study in schools was taken from District Education Officer of Sonepat district. Informed written consent was taken from the head of the schools and schoolteachers. To maintain anonymity, codes were given to the schools.

RESULTS

Out of sampled 50 schools in the study area, 29 (58%) were from the rural area and 21 (42%) schools were from the urban area. Among 19 government schools, 13 (68.4%) schools were located in the rural area and 6 (31.6%) schools were in the urban area. Among 31 private schools, 16 (51.6%) were located in the rural area and 15 (48.4%) were in the urban area. Out of 50 schools, teachers were designated for school health in 16 (32%) schools only. Teachers for school health were designated in 26.3% of government and 35.5% of private schools. However, trained teachers were seen in 11 (22%) schools only, that is, 5.3% in government and 32.3% in private schools. Most of the schools, that is, 48 (96%) had first aid kits [Table 1].

One (2%) private school conducted medical examination at the time of admission. None of the government school observed to conduct the medical examination at the time of admission and it was observed to be conducted in 3.3% of private schools. Forty-eight (96%) schools had daily morning inspection. It was conducted in 89.5% of government and in all private schools. Daily morning health inspection being done in these schools did not include all components of inspection. A total of 29 (58%) schools had a medical examination of students twice a year, 8 (16%) schools having examinations done once a year and 13 (26%) schools had never conducted a periodic medical examination for their students. The proportion of examination was almost similar in both government and private schools. Against the recommendation by the school health committee, 44 (88%) schools did not maintain the records of health checkup/ services provided to the students in the schools. Maintenance of records was observed among 5.3% of government and 16.1% of private schools [Table 2].

Among 50 schoolteachers from sampled schools, 20 (40%) teachers had knowledge score ≥50%. Knowledge score of ≥50% was observed among 57.9% of participants of government and 29% of participants of private schools. Thirty (60%) teachers had knowledge score <50% which was observed among 42.1% of participants of government and 71% of participants of private schools [Table 3].

DISCUSSION

SHSs are a collaborative mechanism in which some facilities are provided by the teacher under the guidance of health care workers.[8] The present study was conducted among 50 randomly selected schools including 31 (62%) private schools and 19 (38%) government schools. Medical examination at admission was conducted in 2% of schools and daily morning inspection was conducted in 96% of schools. About 26% of

Table 1: Distribution of schools under the study area according to their location, status of designated teachers, and first aid kit

Attributes	Government *n*=19(%)	Private *n*=31(%)	Total *n*=50(%)	*P*-value
Location of schools				
Rural	13 (68.4)	16 (51.6)	29 (58)	0.24
Urban	6 (31.6)	15 (48.4)	21 (42)	
Teacher designated for school health program				
Yes	5 (26.3)	11 (35.5)	16 (32)	0.50
No	14 (73.7)	20 (64.5)	34 (68)	
Teacher trained for SHSs				
Yes	1 (5.3)	10 (32.3)	11 (22)	0.02
No	18 (94.7)	21 (67.7)	39 (78)	
First aid kit				
Yes	18 (94.7)	30 (96.8)	48 (96)	0.72
No	1 (5.3)	1 (3.2)	2 (4)	

SHS: School health service

Table 2: Distribution of schools under the study area according to the status of health checkup/inspection of students

Attributes	Government *n*=19 (%)	Private *n*=31 (%)	Total *n*=50 (%)	*P*-value
Medical examination at admission in school				
Yes	0 (0)	1 (3.3)	1 (2)	0.42
No	19 (100)	30 (96.7)	49 (98)	
Daily morning inspection				
Yes	17 (89.5)	31 (100)	48 (96)	0.06
No	2 (10.5)	0 (0)	2 (4)	
Frequency of periodic medical examination of students				
Twice a year	11 (57.9)	18 (58.1)	29 (58)	0.99
Once a year	3 (15.8)	5 (16.1)	8 (16)	
Never	5 (26.3)	8 (25.8)	13 (26)	
Health checkup/services record maintained				
Yes	1 (5.3)	5 (16.1)	6 (12)	0.25
No	18 (94.7)	26 (83.9)	44 (88)	

Table 3: Distribution of teachers designated for school health according to their knowledge score regarding SHSs

Knowledge score	Government *n*=19 (%)	Private *n*=31 (%)	Total *n*=50 (%)	*P*-value
≥50%	11 (57.9)	9 (29)	20 (40)	0.04
<50%	8 (42.1)	22 (71)	30 (60)	

SHS: School health service

schools never conducted the periodic medical examination of the students. First aid kit was available in 96% of schools. Teachers were designated for school health in 32% of schools while trained teachers were available in 22% of schools only. About 40% of schoolteachers had a knowledge score of lable in 22% n 32%f the students. Firstnder ntaining the health records of the students.

We found that the teachers were designated for school health in 16 (32%) schools only (35.5% private schools and 26.3% of government schools). Trained teachers were seen in 11 (22%) schools (32.3% of private schools and 5.3% of government school). These findings are much higher than the finding of Chavan *et al*.[22] (7.6%). Teachers play a very important role in SHSs as they are the ones who carry out morning health inspection of the students and periodic examination.[7] Hence, training of schoolteachers during recruitment as well as periodic training is necessary so as to conduct all these inspections effectively. We observed that 48 (96%) schools had first aid kits, a similar finding was seen by Joseph *et al*.[19] (96.7%) and Nasim *et al*.[18] (96%). However, our findings are much higher than other studies such as Ade *et al*.[7] (63%) and Jiya *et al*.[23] (88.7%). Initial examination of students at the time of admission is important to collect the baseline data to maintain the continuity of the health data.[24] However, in our study, it was found to be done in 1 (2%) school. Nasim *et al*.[18] found that medical examination was seldom done in schools (8%). Chidiebere *et al*.[25] found that screening exercise for health problems and disabilities before admission in schools was carried out in 3% private schools and 26.1% public schools. It may be because of lack of awareness regarding the importance of the first examination in schools. Our study revealed that 48 (96%) schools had daily morning inspection. Finding of the current study is much higher than Jiya *et al*.[23] (77.4%), Joseph *et al*.[19] (56.7%), and Ade *et al*.[7] (41%). We found that 13 (26%) schools never conducted periodic medical examinations of their students which is more than other studies done by Joseph *et al*.[19] (13%), Ade *et al*.[7] (12%), Jiya *et al*.[23] (3.8%), and Kofoworade[26] who found that periodic medical examination was done in 1.6% of schools only. A periodic medical examination is an important screening measure of the students for early diagnosis, detection, and treatment of common morbidities been the most cost-effective public health measures.[27] However, our findings are more than other studies, it is not done in 74% of schools which shows that it is an ignored area. By this we can relate it to the shortage and work profile of health care worker whom are supposed to do periodical medical examination. Even the school health team at district level could not cover all the students in that area due to disproportion of health care worker to students. Health records are a major tool to know about morbidity patterns and school absenteeism. It could help us to see the trend so that we could take appropriate preventive measures.[9] We observed that only 6 (12%) schools were maintaining the records of health checkup/services provided to the students in schools. Our findings are much lesser than findings of Joseph *et al*.[19] (90%), Ade *et al*.[7] (87.5%), and Kofoworade[26] (78.9%). A good well-maintained health record could provide a comparable and continuity of data. It could also be a teaching tool for morbidity among students and it could be used as "Road to Health" for children.[28] We observed that 40% of schoolteachers had knowledge score of 50–74.9% which was 57.9% in participants from government schools and 29% from private schools. A study conducted by Adebayo and Onadeko[15] who have observed that 84.6% of the teachers had knowledge score <50% of SHSs. A study conducted by

Khurshid[29] who has reported that 77% of participants were having knowledge score of 35–64% and 13% were having <34% knowledge score. Findings of the present study are better than the findings of Gowri and Siriya.[8] Inadequate knowledge regarding SHSs highlights the inadequacy of training.

This is the first study on SHSs conditions in schools of district Sonepat, Haryana. Observations, if considered, are likely to make significantly policy change. Study is based on statistically adequate and representative sample. It includes randomly selected government and private schools located in urban as well as rural areas. Although all measures were taken to carry out a well-planned study, still the following limitations have been observed. The study was conducted in only one district, so it may not represent the whole state or country. Some of the observations are based on information provided by the respondents, therefore, recall bias or informant bias cannot be rule out.

CONCLUSION

Our study has revealed that many schools were lacking in providing essential services to the schoolchildren and were observed to be not maintaining the records of the services which were provided. Schoolteachers were also not adequately trained. A simple action of health inspection and record-keeping of data could lead to miraculous improvements in children health. It can help to take effective measures both in the school and in the community. However, to implement these services and making them functional in schools, the knowledge of schoolteachers regarding school health lacks in our study. Hence, we recommend that SHSs must be implemented in letter of spirit by utilizing the well-trained schoolteachers for the sack of health of children.

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